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ASSASSIN'S CREED ODYSSEY

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We've played it, we kicked people like Gerard Butler, and it was good!

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VAMPYR

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For a game about sucking blood, it sure is more than a little anemic.

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THREADRIPPER 2 BLOWS US AWAY

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But are all those cores actually useful?

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B450 MOTHERBOARD ROUNDUP

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Four budget beauties compared.

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THE BIG BREATH

In a lot of ways, we are now in the waiting time.

This is the time before the massive rush of AAA titles that now typify the end of the gaming year. Your Assassin's Creeds, your Battlefields, and your CODBLOPS or whatever iteration of that franchise Activision's peddling this year. It can be a really tough time to build the focus of a magazine... or a great time to celebrate the diversity of the industry.

So this issue is a bit all over the place. A sudden random influx of headphones from everyone! NO PROBLEM! Budget AMD motherboards - good stuff. Stupid high-end AMD processors - WE LOVE IT! Indie titles, AAA games that disappoint and thrill and everthing in between from the positive impact of more positive female rolemodels in games presented at E3 to Nathan Lawrence running around in real life killing virtual zombies with his buddy Jorb...

Hell, we even look at the rise and fall of the Math co-processor and the truly ludicrous animation techniques behind the original Prince of Persia.

Wow... I think I just sold myself on this issue. Good job me!

David Hollingworth
Editor
@CptHollingworth

"THIS... IS... SPARTA! Yeah, I know that wasn't going to last."

PC PowerPlay

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DIRE WOLVES

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PATHFINDER: KINGMAKER RPG GETS A RELEASE DATE

The cRPG of the tabletop RPG is coming to PC in September!

Pathfinder is arguably the most celebrated of all Dungeons & Dragons spinoff settings, with a rich setting and even richer ruleset based off the D20 engine - and the video game iteration is hitting PC in September this year!

DeepSilver made the announcement this morning that Pathfinder: Kingmaker will be released on the 25th of September, and this gives us some serious hype.

The game is set in the Stolen Lands and explores characters and locations both well known to tabletop fans, and all new creations for the game on PC. One of the most interesting features is the ability to found a whole kingdom, which reflects the player's character and their beliefs and the choices they've made in game.

EA ADDS NEW MEMBERSHIP TIER TO ORIGIN

Origin Access Premier includes full games, and early access to new content.

Electronic Arts' Origin service is the awkward middle child of PC game services. It's got nowhere near the depth of Steam (of course), but nor is it the same steaming pile of fail that is Ubisoft's uPlay service.

It just works? Kinda?

If you've been wanting more from it, though, EA's new Origin Access Premier subscription may just excite you a little bit. The service costs $19.95 a month (or $129.99 a year), and for that you get access to The Vault - a rotating roster of entirely free games - but also early access to key EA titles, like these:

- EA SPORTS™ Madden NFL 19 Hall of Fame Edition (August 2, 2018)
- EA SPORTS™ FIFA 19 Ultimate Edition (September 20, 2018)
- Battlefield™ V Deluxe Edition (October 11, 2018)
- Anthem™ Legion of Dawn Edition (February 15, 2019)

"Origin Access Premier offers players a wealth of content, including all of EA's PC games and numerous titles from other publishers in a single membership," said Michael Blank, Senior Vice President, Player Network, in today's release. "As our first-ever subscription service with full access to newly-released EA games, we're offering players more freedom to play the games they want, anytime they want."

In an age where console gamers generally get the early access thing, this ain't bad, but it's also pretty expensive (if you're thinking in Netflix terms). But if you're a dyed in the wool EA fan, the free games probably make it worthwhile as is - and the early games are a good bonus.

SUPER RETRO HORROR GAME WORLD OF HORROR HITTING PC NEXT YEAR

Old Gods? Check. Japanese seaside? Check. Apocalypse? OH YOU BET CHECK.

A year or two ago I think someone must have left a copy of the collected works of HP Lovecraft on a table at E3 or something, because we are getting a whole metric mystic crapload of Lovecraftian horror games right now. And they're a really diverse bunch, as WORLD OF HORROR shows.

There's retro, and then there's grey-scale pixel art with matching chiptunes. And World of Horror (yelling is so tiring), still looks super scary.

"I set out to create something that illustrates just how vulnerable one's sanity can be," said Pawel Kozminski, founder of Panstasz. "I want WORLD OF HORROR to haunt players in a way that creates an uncomfortable sense of apprehension, something that slowly builds uneasiness and anxiety through atmosphere and the uncanny."

Because more anxiety is just what we need in 2018!

World of Horror hits PC and console sometime next year.

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MIDDLE EARTH: SHADOW OF WAR GETS 'FREE' UPDATE TO MAKE IT ACTUALLY NOT SHIT

New skins, new end-game options, and the market place is gone. Shelob, however, is still a mess.

Warner is being kind of... a jerk when it boasts that this new update for Middle of Earth: Shadow of War is 'free'. I should hope so, since it largely exists to fix up problems that were baked into the game at launch.

The new update streamlines the end-game Shadow Wars, and adds in new narrations from the Witch King, Talion, and - fucking hell - Shelob. Winning this part of game also unlocks new rewards, and you can keep on on upgrading your fortresses after the campaign finishes.

There are also new customisation options and a new level cap - it's boosted up to 80 now - and Nemesis mission now offer more XP for faster campaign progression. There are also new Legendary Orcs to cut to pieces, and you can now stop followers from stealing kills.

The biggest and most looked for change? The Market is GONE. All microtransactions - which had no damn business being in the game - are gone.

But you know what?

As long as Shelob is still, to quote a recent Twitter rant (*https://bit.ly/2KzhBKr* if you're curious) of mine "LOOKING LIKE GALADRIEL HEADING TO A GOTH CLUB FOR A QUICK LINE OF GOEY" this game will be an UTTER BLIGHT on the Tolkien canon.

I'm sorry, I don't make the rules.

DARKSIDERS III GETS A NOVEMBER RELEASE DATE

And you bet there are juicy pre-orders, if that's your thing.

THQ Nordic has just announced that Darksiders III is coming to all platforms on the 27th of November this year.

And yes... there's are all kinds of flashy editions and pre-order bonuses to please Darksiders-starved fans. Here are the two big limited editions:

Darksiders III Collector's Edition:

- Premium Box
- Fury Figurine about 29cm - 11" high
- Original Steelbook
- Artbook
- Soundtrack
- Darksiders III Game
- Exclusive Armor DLC; completely original skin replacing Fury's base armor set (purely aesthetic, no gameplay impact

Darksiders III Apocalypse Edition:

- Premium Box ~117cm - 46"
- Wall Scroll - Fabric print with hanger 77 x 100 - 30" x 40"
- 4 Figurines: Fury (~29cm 11" high), Vulgrim, War, Death (each about 25cm 10"high)
- Heavy weight amulet 5cm - 2" with necklace
- Original Steelbook
- Artbook
- Soundtrack
- Darksiders III Game
- Exclusive Armor DLC; completely original skin replacing Fury's base armor set (purely aesthetic, no gameplay impact)

That's... a lot of stuff. Plus pre-orders will also get an exclusive armour for the main character if you go to the right bricks and mortar store, while orders from the PlayStation or Microsoft Store get three nifty packages to choose from.

Is THQ Nordic going hard on this one? You be the judge...

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CORSAIR ANNOUNCES NEW H100I PRO ALL-IN-ONE COOLER

MAKE THE RGBS STOP, PLEASE!

Corsair's just added a new cooler to its popular Hydro series - the H100i PRO Liquid CPU Cooler.

(Note: this is for cooling CPUs with liquid, not for cooling liquid CPUs, which aren't a thing)

Also, wait, the full name is even longer... so we'll only say this once: CORSAIR Hydro Series H100i PRO RGB 240mm Liquid CPU Cooler. Lordy.

Anyhoo, the H100i PRO boasts a pump-head lit by shiny RGB LEDs, connected to a 24mm radiator with two ML120 PWM magnetic levitation fans. The low friction fans spin very quietly, while PWM power allows for precise control of fan speeds.

And the whole thing works with Corsairs' iCUE software so you can get all your RGB hardware synced up and looking cool, while the lighting on the pumphead can be set to represent CPU temp.

The new cooler is available now, and we're awaiting pricing from Corsair.

HP DROPS ENTIRE NEW RANGE OF OMEN AND PAVILION GAMING GEAR

New laptops are joined by a mouse, keyboard, and headset.

A few years back you'd scoff at the idea of a range of gaming hardware and PCs coming from *checks notes*...

HP?

But that was then, and now HP's Omen range is going gangbusters, with striking designs in both desktop and laptop form factors, and now joined by a range of peripherals to match.

At the top of the range is the new Omen by HP 15, which... yes, the name is a bit naff, but the hardware is solid. Under the sleek gaming design MAX-Q GTX 1070, 8th gen Intel Core i5 or i7 processor, and up to 32GB of RAM, alongside a range of storage options. There's a 15.6in display that runs at either 144hz 1080p, 60Hz 4k, or 60Hz 1080p and NVIDIA G-SYNC.

And easy to use screws let you get at the RAM and storage for easy upgrades.

The OMEN by HP 17 beefs things up considerably, with a larger 144Hz display, 8GB GTX 1070, and Bang & Olufsen speakers, alongside a Core i7 processor.

On the other hand, the HP Pavilion Gaming 15 laptop combines gaming power with a more work-oriented machine, with a greater emphasis on storage and powered by a Core i7 processor and either AMD Radeon RX 560X or NVIDIA® GeForce® GTX 1060 with MAX-Q graphics.

On the peripherals front, there's the new OMEN by HP Sequencer Keyboard, with optical-mechanical blue switches and RGB LED keys, the OMEN by HP Reactor Mouse with a .2ms response time and optical mechanical switches (and, yes, of course it's RGB-lit), and even a couple of mouse pads.

That's a lot of stuff. Here's the full list of gear, its RRP, and where you can get it from:

- HP Pavilion Gaming 15 Laptop is available via hp.com.au. Select models are available from JB Hi-Fi, starting from $1,799.
- OMEN 15 Laptop is available via hp.com.au. Select models are available from JB Hi-Fi, starting from $1,999.
- OMEN 17 Laptop is available via hp.com.au. Select models are available from JB Hi-Fi, starting from $1,999.
- OMEN by Mindframe Headset will be available in October 2018 via hp.com.au from $249.95.
- OMEN by HP Sequencer Keyboard will be available in August 2018 via hp.com.au from $279.95.
- OMEN by HP Reactor Mouse is available now via hp.com.au from $129.95.
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The Forever War

War never changes... and neither does ArmA 3's atrocious mod support.

Today's most successful developers seem to devote all their resources towards creating paid cosmetic items at the expense of debugging their games. They don't *actually* do this, but it certainly seems that way. The most extreme example of this trend is of course Star Citizen, a project funded by 'concept sales' of spaceships that haven't been implemented (and at the rate they're going, never will be). A game so buggy that sometimes time will flow backwards, and where smashing watermelons can crash the game client.

But plenty of other games have been accused of cosmetics chiselling: Overwatch, World of Tanks, and even ArmA 3. Especially ArmA 3. It's been a good five years since the release of the latest iteration of Bohemia Interactive's consumer milsim, and in that time the bugs haven't been squashed – they've actually multiplied.

ArmA 3's most glaring failure is its AI. Admittedly, there have been a few little tweaks since launch; infantry are now capable of taking cover and leaning out to fire. But vehicle AI is completely broken. A convoy given simple instructions to move between waypoints, with no enemy contact, will often end up in lakes, get stuck on terrain, or crash in catastrophic ways.

There's a persistent rumour circulating in the ArmA community that the devs who made the AI left Bohemia years ago, and the remaining staff don't have a true understanding of how it works. It's easy to see why someone would believe this; the Jets and Tanks DLC were released with broken AI that is unlikely to be fixed. It would explain why the AI actually seems to be getting worse.

Even if they could fix the AI, there is a clear financial incentive to add impressive-sounding new features instead. "Now with advanced sensor suites!" sounds more glamorous than "Our jets don't get shot down by insurgent technicals any more!" The other day I shot down a helicopter gunship with a tank cannon; that was probably more due to AI shortcomings than my gunnery skills.

Beyond Bohemia's inability to put out these brushfires, there's the awkward fact that their customer base is now effectively split in two. A good 50% of ArmA owners now play survival and 'life' mods, and they have no need for working convoy AI (and the zombie AI was created by modders, anyway). With its focus on civilian gear, the Laws of War DLC was clearly pandering to the Life community.

> "Bohemia's aircraft carrier requires modding for it to actually launch aircraft."

So much content implemented by Bohemia comes across as half-hearted, and half-finished. The underwater combat DLC added divers, mini-subs, and underwater firearms, but did not grant divers the ability to plant explosives. Bohemia's aircraft carrier requires modding for it to actually launch aircraft.

It's conceivable that Bohemia is intentionally hobbling ArmA 3 so as to not create competition for their military grade simulator, VBS3. Consider: the Tanks DLC launched without Active Protection Systems, the counter-measures that many tanks today use to defeat RPGs and missiles. Bohemia reportedly claimed that it would've been too much of a hassle to add this feature, but an Australian modder was able to implement APS after just five hours of coding. Why was Bohemia unable to do the same? It really gets the noggin joggin'.

Most aggravating of all is the way that almost every update to ArmA 3 breaks mod support, forcing modders to trawl through their code to ferret out class names that Bohemia has changed arbitrarily. This might've been understandable for early patches, but five years after launch? This never happened with ArmA 2. No surprise then that a large segment of the player base has refused to migrate from ArmA 2 to ArmA 3.

And why in the world did the first vehicle DLC pack add go-karts? Not tanks, subs, or jets, but... go-karts. It's almost as if the Bohemia staff don't play their own games. (Which reminds me – if you haven't seen it, I recommend tracking down that YouTube video where Chris Roberts attempts to play Star Citizen, and he just sits there in smug bemusement for 20 minutes as the game crashes again and again. To the naked eye, it looks like he doesn't care whether his game works or not. In related news, Star Citizen is now flat out refusing all refund requests. This is clearly another one of the game's many subtle sci-fi references: "Once you have their money, never give it back.")

Finally, apropos of nothing, I'd like to give a shout-out to Telstra's technical support staff. As of this writing they have dispatched eight different technicians to fix my internet connection, but none have been able to stop the dropouts on my ADSL. Thanks, Telstra. I'm looking forward to seeing what the Ombudsman has to say about your rank incompetence... PC

JAMES COTTEE also requires modding to launch aircraft – but it's a much messier process.

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POLITICS AND SCIENCE, SHAKEN OVER ICE

Ice Caves of Europa is out now on Steam, and we have a chat to the game's local creator - **CONOR O'KANE** - about the inspirations, and challenges, of being a politically-minded indie developer in Australia.

PCPP: In a time when there's a vocal minority that calls for politics to be left out of games, Ice Caves of Europa seems to put them front and center – why do you think that's important?

Conor: If games are to be taken seriously as a mature medium, there needs to be games that are more than just entertainment. Game design is just like any other creative pursuit such as writing, painting, or directing. In film for example, there's room for action-packed summer blockbusters with little plot but lots of explosions, as well as thoughtful 'indie' films that deal with important or difficult topics. The same should be true of games - however, game designers often come under pressure to not make their games controversial or political.

One source of this pressure is from publishers. Even when a game is clearly dealing with a political issue (such as Far Cry 5's attempt to show the impact of Christian gun-hoarding cults in rural America) the publisher will typically steer the game away from depicting real-world events or groups, and insist that it is not an attempt to convey any one political point of view. A publisher's aim is to make money, so it is not in the publisher's interest to release a game that depicts a section of the population as evil or hypocritical if they want that very same group to buy their game.

Another group strongly resistant to political messages in games are the group known as Gamergate. The idea that games can be enjoyed and made by anyone is, for some reason, horrifying to them. Their tactic of harassing anyone who produces games with protagonists that aren't straight white males, or who even questions the current state of minority representation in games, clearly shows their underlying motives.

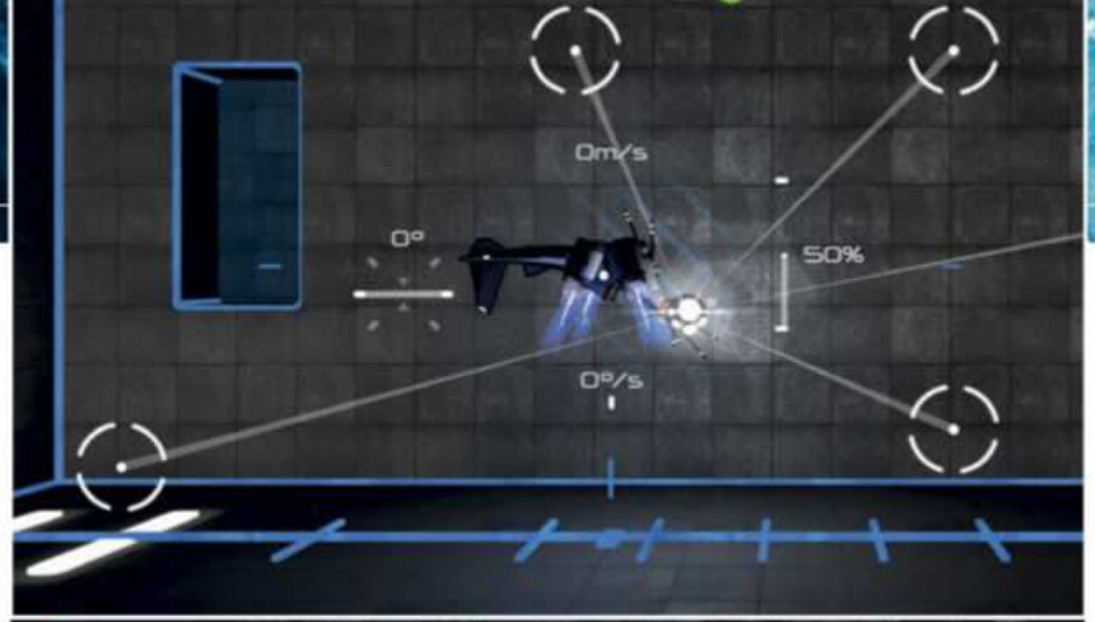
One of the scientists in Ice Caves of Europa is an Indian woman who wears a sari, because I found this scene of Indian scientists celebrating their 2014 Mars mission so striking: *www.bbc.com/news/world-asia-india-29357472*. This completely breaks the stereotype of what a scientist looks like, which I think is important, because it allows anyone playing the game to realise "I could be a scientist too", even if they don't conform to society's expectations of what scientists look like.

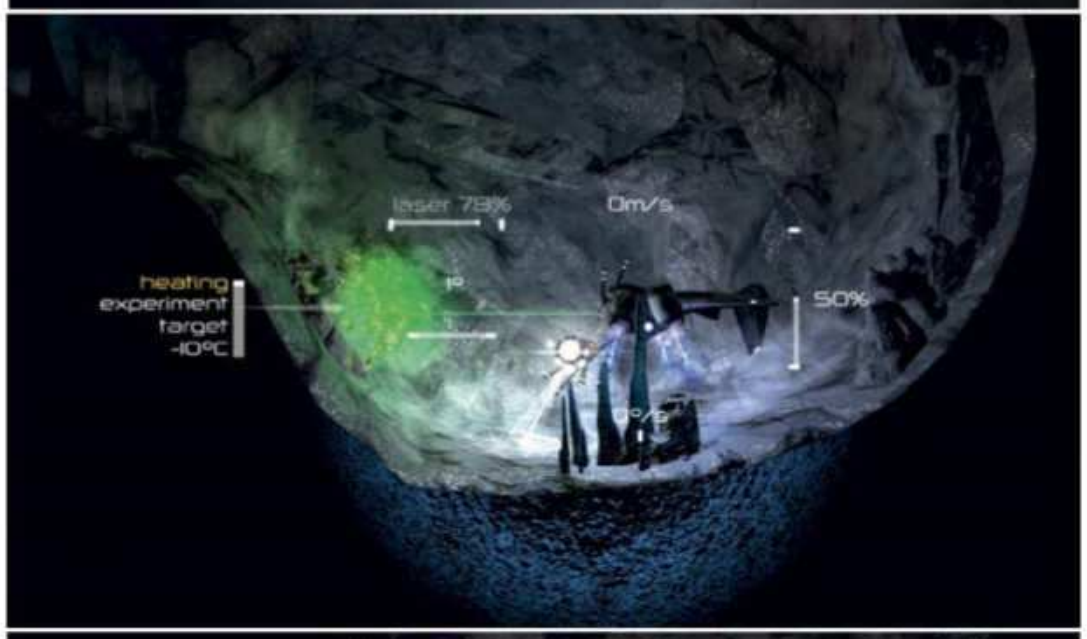
So, with this game I wanted to explore issues society will face as new technologies emerge. I think the real power of science-fiction is to take questions we're facing now, or about to face in the near future, and examine the consequences of possible decisions we might make.

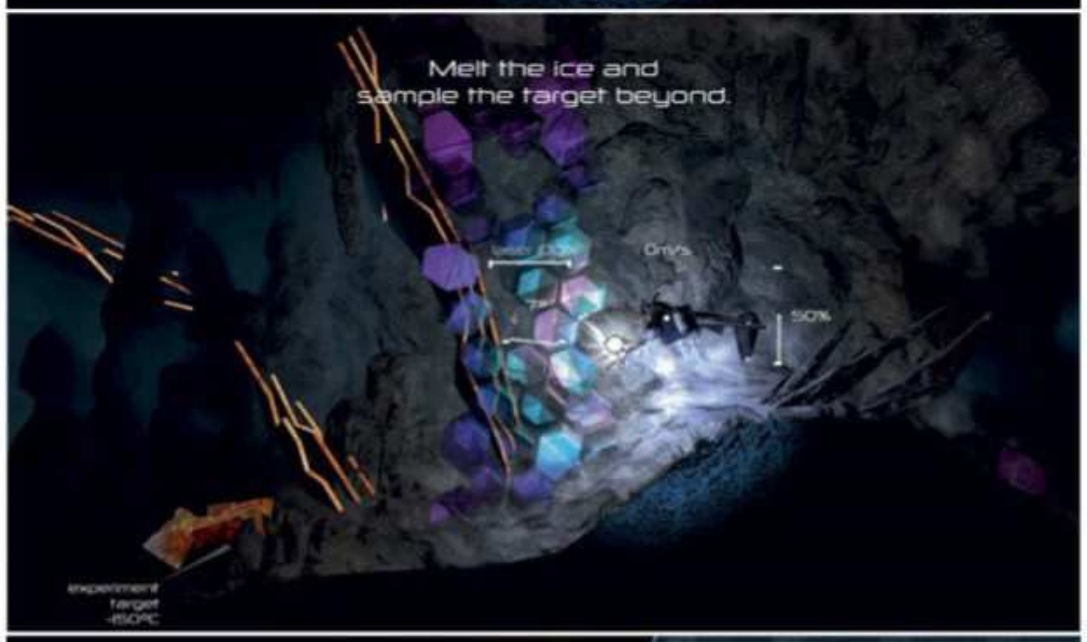
As an example, Verne - the artificial intelligence sent to explore Europa in the game - objects to having his memories overwritten. The humans who created him still treat him like their property or software, despite him being self-aware. It's easy to think objectively about a question when you transfer it into a science fiction setting: should the robot be given human rights if he's self-aware - yes that sounds reasonable, particularly if he's asking for those rights. But people rarely stop to consider such questions in everyday life: should an animal such as a gorilla, who is clearly self-aware and can communicate, be given rights? Should a refugee arriving in your country have the same rights as a citizen? Is a society where women have fewer rights than men something we should tolerate?

Any situation where a sentient robot had fewer rights than a human would seem obviously unfair to most people, but many people are quite content to see real humans suffer and have their rights removed because those humans are a different race, nationality or gender.

Real science and hardware informs a lot of the technology







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We've figured a way to increase the power of your laser so you can melt those dense ice crystals you encountered.
Ronan
Next
Skip

in your game – what are some of the exact inspirations for Ice Caves? And what inspires you about them?

Much of what we know about Europa is due to the Galileo spacecraft, which NASA launched in 1989. The data it collected provided evidence for the liquid ocean beneath the surface of Europa and it took many stunning photographs of the fractured surface. However, two new missions - Europa Clipper and the Jupiter Icy Moons Explorer - are set to launch in the 2020s and unlike Galileo, which was mainly tasked with studying Jupiter, these missions will focus on Europa and the other moons. They will have much higher-resolution cameras capable of discerning small details on the surface and it may even be possible for them to fly through plumes of liquid water erupting from the surface of Europa and thus take a sample of the ocean below.

One of the most inspiring planetary exploration missions, for me, has to be the Mars Curiosity Rover. Its photographs of the surface of Mars show it to be a fascinating, dynamic place with an amazing mixture of ancient geological features like volcanoes and river-valleys, but also modern erosion and weather effects. When you have a human-scale rover wandering around the surface of another world, it seems much more real and personal than a satellite photograph. It makes that world feel like a place we could really visit ourselves one day.

> The industry is well supported with a variety of grants available from Creative Victoria and Film Victoria

Ice Caves of Europa features a mission that lands on Europa shortly after a comet impact cracks open the crust, allowing it to explore beneath the surface. A lander mission to Europa isn't practical with current technology (or budgets), but part of the appeal of a video game is doing things you couldn't do in real life.

I ask every Australian indie dev this one, but what are some of the unique challenges of being an indie dev in Australia, and how do you overcome them?

Actually I find Australia to be a great location to be an indie dev, and Melbourne in particular. There's a thriving community of developers who meet up regularly to compare their work and get feedback. The industry is well supported with a variety of grants available from Creative Victoria and Film Victoria, and while there aren't as many large studios as there were ten years ago, there is a huge proliferation of smaller studios doing mobile, VR and indie development. The high cost of living and high salaries (compared to outsourcing work - which is very common in game development) make running a studio in Australia expensive, but I think the pool of talented graduates and industry experts makes up for that.

Thanks for your time! If you want to check out Ice Caves of Europa for yourself, you can read our review on page 46, and find it on the Steam store. *DAVID HOLLINGWORTH* PC

Seasons of Love

Baby, it's cold outside, and there's a giant tofurkey on the table.

As I have previously mentioned, the way I play The Sims 4 is diabolical. Everyone is perfect, no-one has any friends and the unfortunate townies who contribute genetic data to furthering my fiendish lineage only see their offspring if I can be bothered inviting them over; which is never. There is, however, one expansion pack that always inspires humanity in me; melts my heart like spring snow, if you will. It makes The Sims feel that little bit more real. No, it's not Laundry Day Stuff but, my word, that is an actual thing.

It is, of course, Seasons.

My undoing was immediate. I invited the female townie (who was only ever supposed to be a biological vessel for my continuing madness) in for a Grand Meal on Winterfest. I even gave her a present; a new feature which efficiently improves relationships when you're not wasting time on social skills and rewards. Then it was Love Day and I couldn't ignore its associated buffs, so I gave her flowers and more gifts. By Harvestfest, she was a fully functioning member of the family, making flower arrangements, tending the garden, and secretly wooing the scarecrow.

The calendar, which shipped with Seasons, means you can see when these new holidays, including New Year's Eve and Talk like a Pirate Day, will occur. (You can even make custom holidays and traditions, like a barbeque where everyone streaks or pays respect to the garden gnomes.) Other new features, however, are less intuitive. I thought I knew how gardening worked but this process has changed significantly. As I often do, I went to Carl's Sims 4 Guide to get some hints on how to streamline my horticultural overachieving.

Carl's guide first explained that the reason I hadn't seen snow in Winter is because I was playing in Oasis Springs, a desert region. I guess this means it's cold, but dry, and that each world has slightly different weather. Snow or no snow, one of the major changes to gardening is that plants will only grow in their season/s. I'd been keeping one perfect spinach plant because eating perfect spinach makes Sims +3 Happy, but it now lays dormant until Winter. I had also noticed tweaks, like area of effect watering and telekinetic plant evolution, as the guide confirmed.

I do have to admit to being a fan of Carl's Guide. The first thing I ever helped write for PC Powerplay was a lengthy Sims 2 guide and, not being privy to any official information, I still recall how difficult it was to definitively connect cause and effect within systems. I asked Carl Ratcliff what the most challenging thing about maintaining his guide is. He says, "Motivation. The expansion comes out when it's ready, but are you in the right place to write about it? I'm lucky to be writing about games professionally and do remind myself of that."

> "As I often do, I went to Carl's Sims 4 Guide to get some hints..."

Carl says he's spent "thousands of hours over the last decade" creating Sims guides and that a great guide "helps people to get more enjoyment out of the game because learning how things function is key." I also asked Carl which parts of his site get the most hits. He says, "Aside from wanting to know how to cheat, people are looking for skill and career guides. They want to know how to care for babies and toddlers, too." Maxing toddler skills on normal speed is still one of my favourite self-directed challenges in The Sims 4, as well as nailing adult careers.

Although Carl suggests that "gamers want to know how changes will affect their character", I'm generally more surprised by how expansion packs change me. I accidentally got quite attached to the townie-mum-gardener mentioned above. Unfortunately, so did her family who were all +5 sad for days when the cowplant ate her. So that's what happens when Sims care about each other. She was at level 8 of Flower Arranging, too. Worse, Love Day rolled around again and her partner got the sad debuff of non-participation because I felt bad about making him date someone new.

What has happened to me? It's okay. I always got mushy when Seasons is released. I was also somewhat hot and cold on The Sims 4, largely because the initial gap in content seemed egregious, even if emotions were an exceptional new feature. And I do like packs with prescribed goals, like Jungle Adventure. I'm almost tempted to try out Laundry Day Stuff, just to see how 'complete' the game can feel before we get magic and robot love interests (another feature that undermines my 'no love' rule for some reason).

I've used Carl's Sims guides for as long as he's been making them. They provide exactly the information I'm looking for and as Carl says, "We get addicted to those level-ups and a sense of moving forward." Yes, including when toasty-warm winter feasts soften our hearts and playstyles. Carl's guide also has forums where you can join in challenges, tell stories or discuss game features. PC

MEGHANN O'NEILL does form loving relationships with her friends and family in real life, she promises. Doesn't do laundry, though. Her husband seems to get positive moodlets from clean, white shirts, which is useful.

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MADE in TAIWAN

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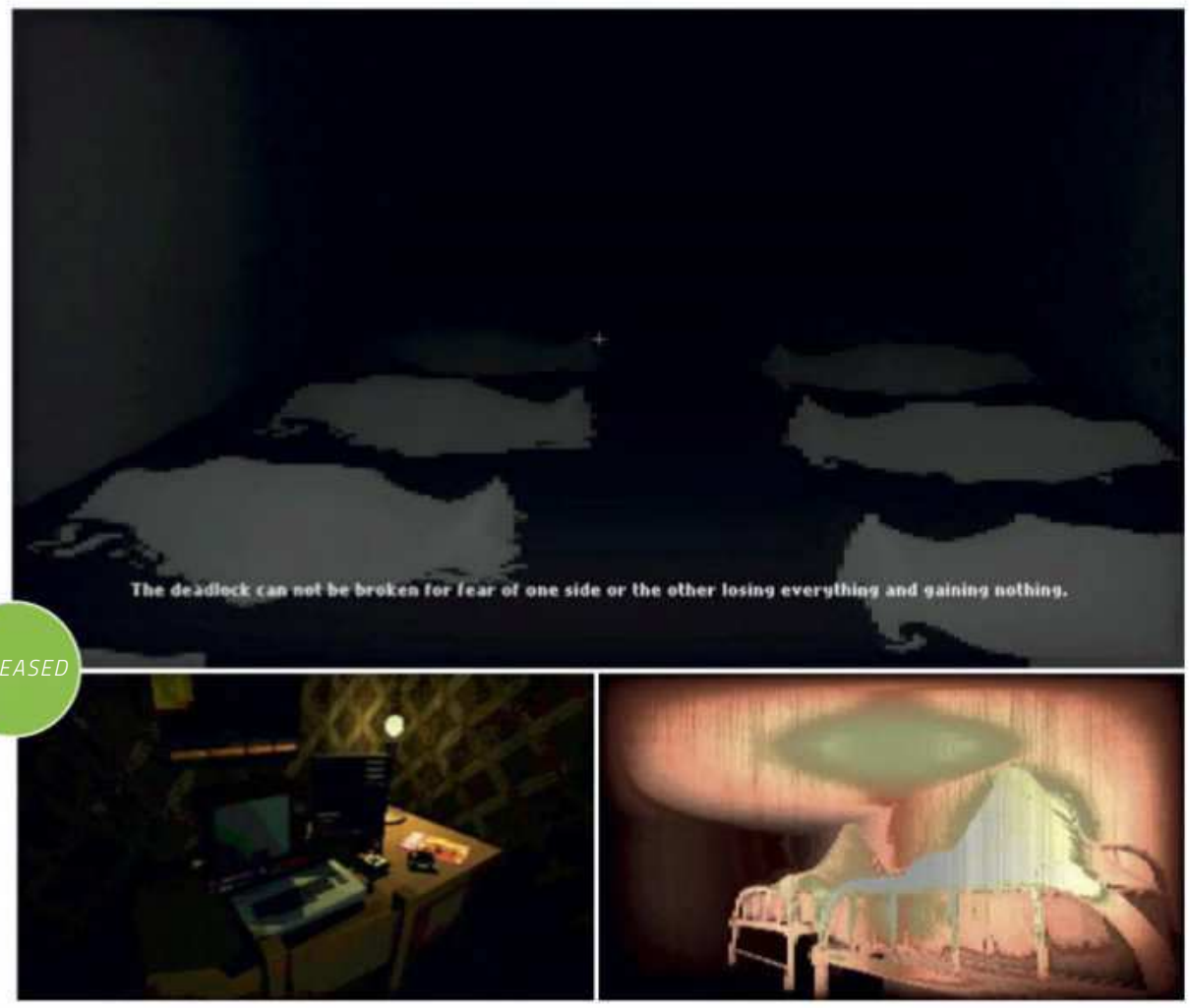
A Collection Aside

What do snails, bedrooms and a multi-tool have in common? They're all part of this month's indie collection. **MEGHANN O'NEILL** combines weird with wonderful, comic books with Cold War, and generally draws together something for everyone. Just remember to check on the tomatoes. They might not be okay.

FIRST WINTER

DEVELOPER DAN SANDERSON • **PRICE** US$3.20
danthai.itch.io/first-winter



RELEASED

I've been meaning to write up Dan Sanderson's surreal, atmospheric experiences for a while. The first three are 'choose your own price' (including free). They're short, but I spent some additional time watching Let's Plays, to enjoy other people's screaming and confusion. I first played The Tomatoes are OK, a not-quite farming sim, because of its amazing name. It's (possibly) an exploration of how motivation doesn't align with reward. It also made me wonder if farmers worry about their tomatoes, and that feels important to mention somehow.

Boolean Escape is an interesting experience, too. As with all of Sanderson's games, it messes with expectation, reminding me of Antichamber by Alexander Bruce. It's basically a collection of switches and objects you can interact with in a binary (on-off) kind of a way, to solve an evolving level. There's also a shared aspect to this one, reminding me of how players experienced content created by other players in Moirai, by Chris Johnson. Both games are even more interesting during a second playthrough, when you can see context from a wider angle.

Pacific is a micro-horror experience which, according to the itch.io page, received more attention than Sanderson was expecting. This was his impetus for creating First Winter, a longer remake of Pacific. At around forty minutes in length, I played it over lunch. It made me feel frightened, inspired and quite sure that there was more to this than than I had discovered on a first playthrough. And so, several Let's Plays later, I was blown away when I saw someone find a fantastic secret. I won't spoil it. It's absolutely worth searching for yourself.

First Winter begins in your (thoughtfully crafted) bedroom, to up-tempo, 80s music and eye-wateringly fancy wallpaper. A TV news report explains that a Soviet submarine, potentially armed with nuclear weapons, has been sighted close by, then the game gets feverish and weird. I remember people fearing nuclear war in the 80s, as well the traumatising, Cold War fiction we had to read in English classes, even if I was born towards the end of the actual Cold War era. First Winter feels nightmarish in a way that ten year old Meghann can relate to.

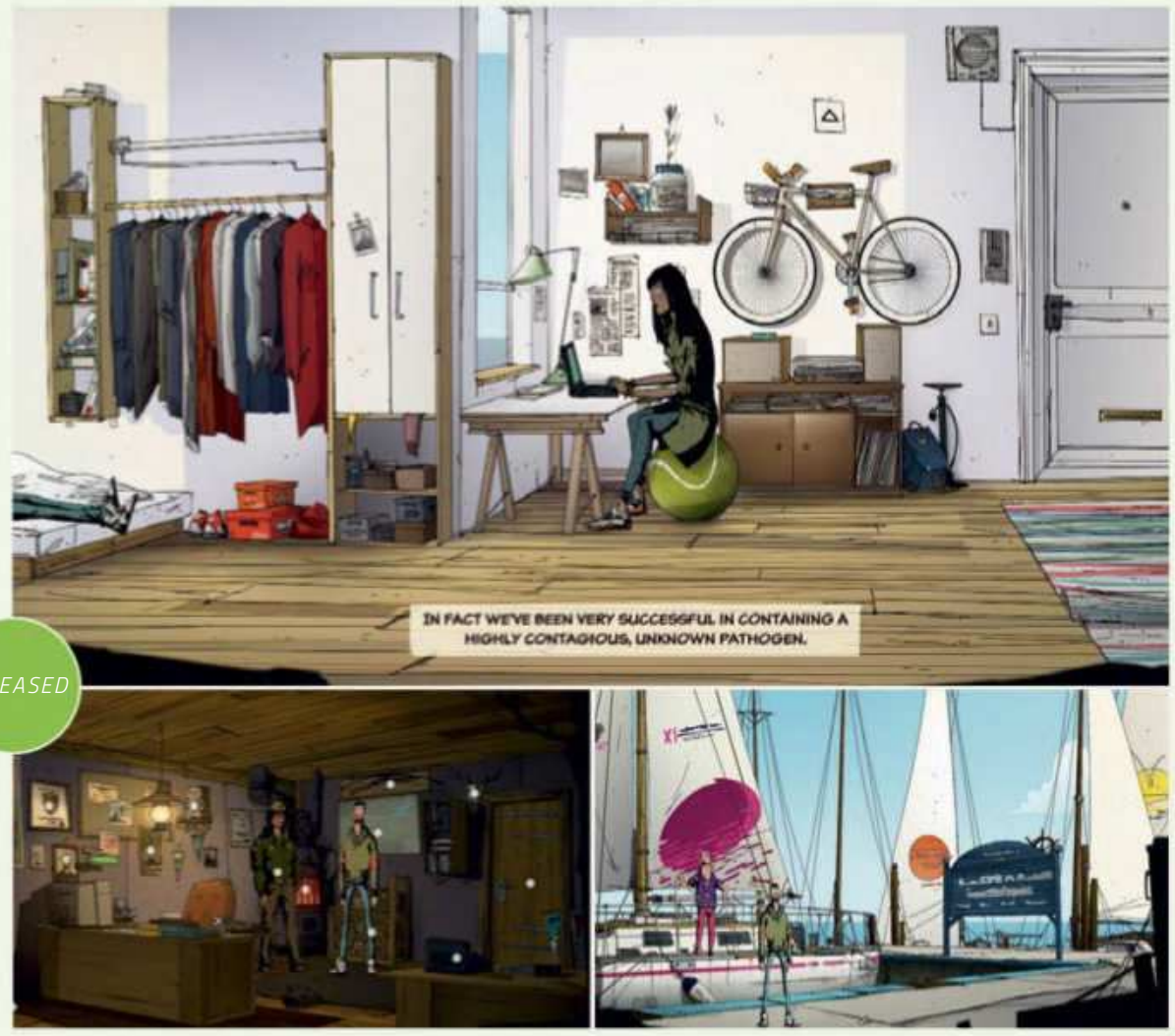
Level design doesn't bother to be realistic or logical. If, for example, you encounter a locked door in your building, turn around, interact with something that has appeared back down the corridor, return and it will magically unlock. Then, after you've opened the door and turned your back to it, expect the door to disappear entirely, revealing a staircase down to a submarine. The way levels are organised serve the chaotic narrative while also allowing the player not to have to run around unnecessarily, which is surprisingly nice.

Basic interactions include picking up objects, rotating them and putting them down again. Sometimes you'll grab a cassette tape and listen to it later, but interaction generally just serves the story. To this end, there's a particularly depressing corridor full of exploding cities. First Winter, like all of Sanderson's games, is a confusing, claustrophobic and paranoid experience that is as fun to watch others play as it is to play yourself. I'm glad to see this most recent iteration of a game got a larger release and I'm excited for whatever Sanderson makes next.

> "Sometimes you'll grab a cassette tape and listen to it later, but interaction generally just serves the story."

UNFORESEEN INCIDENTS

DEVELOPER BACKWOODS ENTERTAINMENT • **PRICE** US$20
www.backwoods-entertainment.com/unforeseenincidents.html



RELEASED

This may sound like an odd point, but I notice bedrooms in games, especially adventures. I was blown away by April Ryan's digs in the Dreamfall series and how they transformed as she grew and travelled. They were sparse, magical and medical. In King's Quest 3, Manannan's fancy bedroom was a dangerous place to be, yet being able to hide contraband under Gwydion's simple bed was a revelation. I suppose "a place that is yours" reveals something about your nature and Unforeseen Incidents uses detailed, evocative bedrooms to great effect.

The story opens with a radio broadcast, warning residents about an outbreak of Yelltown Fever. No-one is quite sure what this is, just that there are symptoms to look out for and procedures to follow when you get sick. Harper's bedroom, with cardboard taped to the windows, piles of junk lying around, and a simple mattress, casts him as a humble handyman who can find a use for everything. Obviously, his personality perfectly suits the adventure genre. He also has an affectionate relationship with his multi-tool, praising and singing about it on interaction.

With verbs like 'push' and 'pull' hardly being used in adventures, I wondered if every part of the multi-tool, including scissors, screwdriver and wire strippers, would be used. Surprisingly, they were, alongside items like hoses, tape and Christmas lights. One puzzle has you making homemade developing fluid to use with a roll of film. Not being particularly handy myself, I found that the balance between assumed knowledge and instruction made things challenging but not impossible. In fact, I sometimes found locating items more difficult than using them.

This is partly because I didn't realise that you could reveal hotspots with the spacebar, because the game is light on 'handholding'. It's also because the art is so detailed it can be difficult to notice what you need, or you're required to interact with junk piles after knowing what you're looking for. The backdrops are absolutely worth staring at, however, mostly dark and grey, yet incredibly evocative. The live-recorded soundtrack is also gorgeous, even if implementation sometimes doesn't consider a player's rapid transition between areas.

Later in the game, you travel to a seaside village and see the bedroom of another character. It's painted white, with wall-dents and peeling paint, like a comfortable, old rental apartment. There's a hipster bike hanging on the wall, vinyl records, a tennis ball chair and a small picture of a triangle. Seeing the ever-practical, self-effacing Harper in someone else's thoughtfully decorated room is dissonant, while highlighting that he's been forced to grow beyond his comfort zone in response to dramatic events.

Unforeseen Incidents' most special qualities are its detailed characters and art, as well as a range of engaging puzzles. As an unfolding mystery, it's also cleverly written, with little clues and moments of foreshadowing woven into the narrative from the very beginning. So, if you're an adventure game fan craving content, I'd highly recommend it. It prompted me to stand in my own bedroom to stare at the Ramayana painting we bought in Nepal, the hiking photos Ken took on our honeymoon and the piles of clothes I should probably put away more diligently.

THE FRAMED COLLECTION

DEVELOPER LOVESHACK ENTERTAINMENT • **PRICE** US$10
framed-game.com

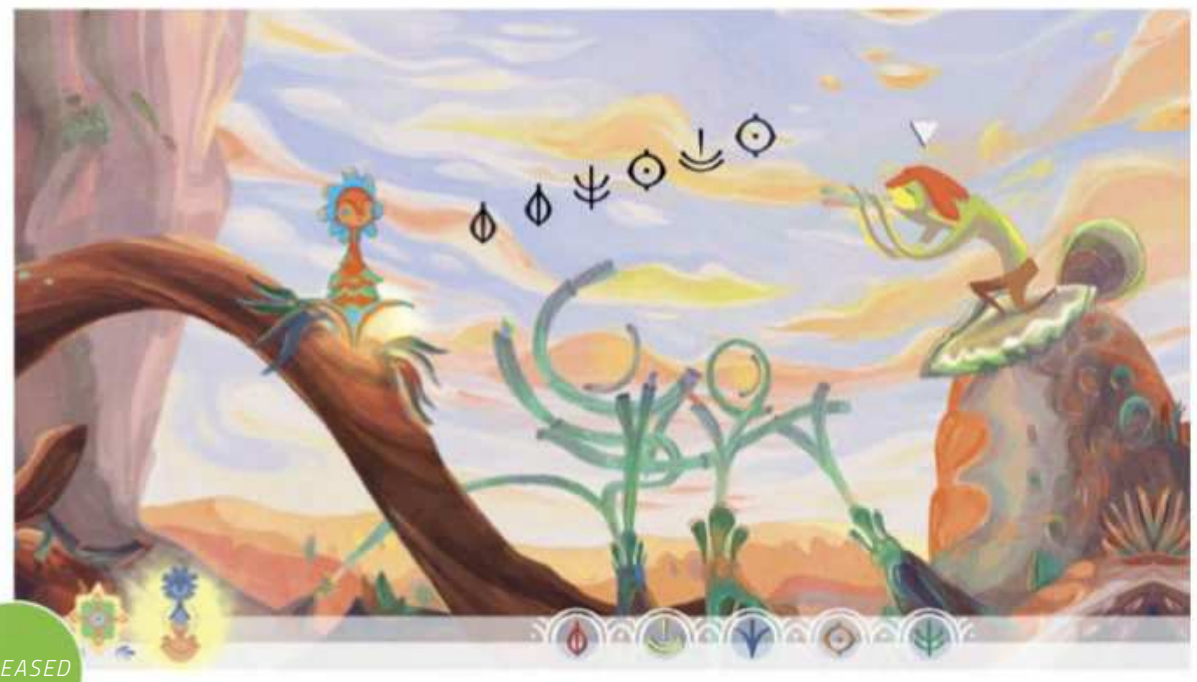
Way back in 2013, I went along to the first ever PAX Australia and wrote up a preview of an intriguing, panel-switching comic book. It seemed like such a good idea. You don't control characters, you control context. Although originally intended for PC, Framed and Framed 2 were released first on mobile devices. Recently, however, The Framed Collection has appeared on Steam, having undergone minor changes to user interface. I played these on mobile, but PC is actually the platform I prefer for games of this complexity.

It's not that they're super difficult, and I finished both games in a couple of hours (total), but more that the character runs to the blue door, needs the next frame to get them from blue to red, then from red to a vent, and so on. Especially in Framed 2, where some panels must be travelled through more than once, concentration is required. I also particularly like puzzle games which seem impossible at first glance, then prove not to be the more you experiment with game elements. Framed does a good job of fostering inaccurate assumptions.

Certainly, one of the most interesting things about the context-arranging mechanic is trying to forecast how characters will behave. If they have to jump down to a plank, it's easy to see that a long fall will break it whereas a small fall will be safe. Other times, you might expect a character to climb a drainpipe but they'll engage with some other feature of the panel instead. As a commentary on game tropes and a meditation on design, Framed is absolutely worth a look on PC (assuming you haven't played it yet). It's polished, clever, and Aussie.

SHRUG ISLAND - THE MEETING

DEVELOPER TINY RED CAMEL • **PRICE** US$10
shrugisland.com



RELEASED

Shrug Island - The Meeting is a bite-sized (probably 45 minutes long) Loom meets Botanicula. Two friends are separated, finding their way back together through lovely art. Each has a special ability and their actions will affect the progression of the other. One can see a kind of shadow realm, where they can collect useful items and imagine 'what could be', like a hug across the water. The other uses combinations of five musical pitches to manipulate the environment in a way that doesn't get explored to its potential, but is interesting nonetheless.

The music is wonderful, combining non-Western vocal melodies with synth backdrops that weave in the increasingly complex musical content you're using to solve puzzles. I'm amazed by how well (and how subtly) this concept works. Short passages of text provide enigmatic clues and function as poetry, too. I don't really have the vocabulary to describe the art style except to say that it's colourful and beautiful. I loved staring at the light reflecting through ponds and from lofty vistas. Every artistic element in the game is like a delightful treat.

I'd recommend Shrug Island - The Meeting as one to play with the family, or if you're an artist or musician. Although it was great, I feel as though it's a precursor to some future game which will build on these aesthetic and gameplay elements to even greater effect. This was alpha-funded, so hopefully the developers are able to access the resources needed to continue exploring their ideas. Frankly, I'm surprised more games haven't considered implementing music systems as game mechanics. Shrug Island isn't quite Loom but it's the closest I've seen in a while.

I'm worried if he kills me, he'll eventually find my code on my body. I thought of eating it - but the paper it's printed on is non-biodegradable!
Press SPACE to switch characters (or use icon on upper right)
Choose a character
Christian
Zoomer
Shelley
Papa, will we have enough to eat on this new world?

RELEASED

THE SNAIL TREK COLLECTION

DEVELOPER PHIL FORTIER • **PRICE** US$3
snailtrek.com

You're on a desperate space-pilgrimage to find a new home for your entire species. Your captain has disappeared from their pod, under highly suspicious circumstances. You've reached the lettuce planet but can't send the 'all green' signal without them. The lettuce dispensing machine has failed. There's a problem with the landing gear. It's all very dire. Oh, and you're snails. The spacewalking sections of Snail Trek may be a little dubious but, if it crossed my mind that the snail-thing might just be a gimmick, this is definitely a tale that can only be told about snails.

Snails? I know what you're thinking. Characters in Sierra-era adventure games took forever to walk across the screen, making requisite backtracking annoying. Snails are, surely, even slower to move around. Interestingly, a sprint option is only one of many ways that the designer expertly walks a line between 'fond nostalgia' and 'I actually hated how games did that'.Yes, Snail Trek uses a text parser interface, but in a way that predicts and corrects. So, when I typed 'snial' for the fiftieth time, the game still knew exactly what I was saying.

I don't usually worry about discussing the price of the indies, but the Snail Trek Collection is an absolute steal at five bucks. The first episode is very short and quite easy to complete in around twenty minutes. By the fourth, the puzzles are complex and challenging. I also particularly like how the setting gets incrementally larger, over the course of the series. In the first episode, you're restricted to a couple of screens on the ship, before exploring more widely, over maybe fifteen screens, while still needing to complete puzzles in the original areas.

The weather and time of day change between episodes, allowing for the context to evolve. I particularly liked that a sudden death in one episode (with a thoughtfully placed auto-save directly before it) became a puzzle in the next. The story is cleverly structured, with a balance between tension and humour. It does get super dark at a couple of points, especially when you have to act in an evil manner. There's also an evocative section evolving a child-snail which extends into an epilogue. The story definitely ends, but I'd love to know what happens next, too.

> "There's also an evocative section evolving a child-snail which extends into an epilogue."

Another interesting feature of the text parser is that it reacts to what you're close to. So, you can stand next to the ladle and type 'look' and you will look at the ladle. Also, if you type 'open door' your character will often walk across the screen to do this, rather than saying 'you're not close enough'. These points may seem insignificant, but this smoothes the 'hardcore' experience in a way that I hardly noticed but absolutely appreciated. Everything that has been changed is a subtle, but vast, improvement on text parser interfaces.

Snail Trek is great and you should play it. I'm also excited to report that Phil Fortier is quite far through development of his next title, Cascade Quest, which promises, "glaciers, sausage, particle accelerators, lava, avalanches and a goat", as well as "glorious undithered 'EGA' graphics". Given the quality of puzzling in Snail Quest and the Fortier's obvious feel for what nostalgic adventure fans need, I'm sold already.

Now we just need to find a way to pair Fortier with the Stair Quest crew and I'm set for life. PC

10 to Watch

Throw Anything

DEVELOPER VISUALLIGHT
PUBLISHER VISUALLIGHT
DUE NOW
www.vltgame.com/

1

▲ Another one that just scraped in to the issue, but looks really cool. It's a VR game, but the premise is hilarious – you're trapped in an apartment, and need to hold off the zombie hordes. The kick is that EVERYTHING is a possible weapon. Out of ammo? No problemo! Just smash anything – and everything is destructible – and throw the bits at the shambling dead. Even NPCs can be tossed to their doom, and your salvation.

It's smash or be killed.

Guacamelee! 2

DEVELOPER DRINKBOX STUDIOS
PUBLISHER DRINKBOX STUDIOS
DUE AUGUST 2018
www.guacamelee2.com

2

▼ This one pops into Steam in that awkward spot between this magazine going to the printers (so we can't review it), and it going onsale, so chances are very high that it is out even now…

And why should you play it? In a word…

Luchadors.

Come on, everything is cooler with Mexican wrestlers, and that's pretty much the whole point of the game. That and turning into a chicken, which brings with it, and I quote, "never-before-seen chicken abilities."

What an exciting time to be alive.

NBA 2K19

3

DEVELOPER VISUAL CONCEPTS • **PUBLISHER** 2K SPORTS • **DUE** SEPTEMBER 2018
www.starshipcorporation.com

There are two kinds of sports games in the world – those published by Electronic Arts massive sporting franchise, and those that are not (incidentally, there are actually seriously only two kinds of people in the world – those who believe there are two kinds of people, and everyone else).

NBA 2K19 is pretty close (and may even be out by now, depending on when you're reading), and is packed with apparent stars of this iteration of sportsball, like LeBron James, who I really only know because Donald Trump seems to hate him, so that makes him okay in my books. Other players include James Harden, Giannis Antetokounmpo, and Australian Ben Simmons.

Bloodroots

4

DEVELOPER PAPER CULT • **PUBLISHER** PAPER CULT • **DUE** 2019
www.papercultgames.com

It is the wild west.

You have been betrayed.

Vengeance is your only option.

But how you enact that vengeance, and cut your bloody swathe? TOTALLY up to you. Bloodroots is full to the brim with different tools to kill all who get in your way – barrel-run over enemies! Smash into them with a wagon! Use the wheel from your now broken wagon to… you guessed it – kill indiscriminately!

Described by the developers as an "acid western", this sure looks like one mad trip where you will most definitely need to dig more than one grave - more like one thousand!

Tekken 7

DEVELOPER BANDAI NAMCO
PUBLISHER BANDAI NAMCO
DUE VERY MUCH OUT NOW
www.escapefromtarkov.com

5

Okay, so when we say this is out, we mean OUT. Tekken 7's been out for years, so you may wondering why we're saying it's a game worth watching. Well, the Season Pass 2 package details have dropped and it's got some… surprising new fighters.

Two of the fighters are returning characters - Lei Wulong and Anna Williams – but the real surprise is The Walking Dead's Negan. Yep, that barb-wired-wrapped baseball-bat-wielding fucker is now a playable character in what must be one of THE most unlooked for crossovers in gaming.

Wild.

Dead or Alive 6

DEVELOPER KOEI TECMO
PUBLISHER KOEI TECMO
DUE EARLY 2019
teamninja-studio.com/doa6/

6

The latest news for popular jiggle simulator Tekken 6 is the addition of two new characters to the fighting game's roster.

Diego – who is also known by the not-at-all pretentious title of "The Uncrowned Street Hero" – is a new addition to the game, and he's everything you'd expect: brutal headbutts, vicious tackles, and a range of other gritty tactics. Otherwise he's pretty much a New York tough guy straight from Central Casting.

Also joining the game is taekwondo master Rig, whose skills include… well, it's right there.

GRIP: Combat Racing

7

DEVELOPER CAGED ELEMENT • **PUBLISHER** WIRED PRODUCTIONS • **DUE** NOVEMBER 2018
www.wiredproductions.com/games/Grip

Grip is unapologetically inspired by Rollcage, and is one seriously fast and offbeat racer. The name kind of says it all, as cars technomagically can grip any surface – the challenge in each race is to time your transitions and nail that upside down, twisting sideways, landing.

All while not throwing up from intense motion sickness, I guess.

And did we mention weapons? Because of course there are weapons, making each mind-tearing race that much more chaotic.

F1 2018

8

DEVELOPER CODEMASTERS • **PUBLISHER** BANDAI NAMCO • **DUE** NOW
www.croteam.com

Another one that just comes out at the same time we do, so it's kinda odd that the first gameplay footage only dropped a couple of weeks ago (in magazine time).

"This is the most complete F1 experience that Codemasters has ever created," said Game Director, Lee Mather. "The Career mode is the central point of the game and has been greatly expanded with the inclusion of pressurised press interviews that will directly affect your path through the sport."

But it sure does look pretty.

Shortest Trip to Earth

DEVELOPER INTERACTIVE FATE
PUBLISHER ICEBERG INTERACTIVE
DUE 2018
shortesttrip.interactivefate.com

9

▼ Coming to Early Access later this year, Shortest Trip to Earth is yet another procedural roguelike, but let's face it – the genre is popular for a reason, and this one looks intriguing.

Shortest Trip to Earth is about exploration, managing your ship, making tough decisions that will affect the game, and LASERBEAM-FILLED TACTICAL BATTLES okay I may in fact be a little excited.

Also – space monsters.

It may be a little bit derived from FTL, but frankly, that's no bad thing.

10

Achtung! Cthulhu Tactics

DEVELOPER AUROCH DIGITAL
PUBLISHER RIPSTONE
DUE 2018
www.aurochdigital.com/achtungcthulhuvideogame

▲ Based on a popular tabletop RPG, successfully funded via Kickstarter, Achtung! Cthulhu Tactics is a real nuts-and-gum ("two great flavours – together at last!") proposition: World War 2 strategy and the vast undying regard of the Elder Gods beneath whom we are less than maggots.

So OF COURSE the Nazis have sided with the Elder Gods, and it's up to you to stop them in this tactical, squad-based game of eldritch horror.

IT'S ALL **GREEK** TO ME

Assassin's Creed Odyssey:
An Epic Greek tale for everyone.

During the unveiling of Assassin's Creed Odyssey at Ubisoft's E3 press conference, Ubisoft Quebec described the latest entry in the series as an "epic RPG". As Ubisoft Montreal began to change the series' linear action adventure roots to that of a more action-focused RPG in Assassin's Creed Origins, Ubisoft Quebec continued to develop the franchise into what fans of epic player-drive role playing games love; creating a lovechild of Ubisoft open worlds and the beloved consequential deep roleplay universes of CD Projekt Red, Bioware and Bethesda.

"The Elders Scrolls V: Skyrim, Fallout, those two are probably some of my favourites," Director Scott Phillips told *GameSpot*. "And if you look at those games, they give players a lot of options. For us, that was what we wanted to push Assassin's Creed as a franchise into: more choice for the player."

MYTHS AND LEGENDS

Set in Ancient Greece in 431 BC during the Peloponnesian War between Athens and Sparta, you play as the child of Leonidas, the legendary Warrior King of Sparta. After a prophecy predicting you will curse the Spartan Empire, Leonidas deems you an outcast and throws you off a cliff. Surviving, you eventually become a Spartan-turned-mercenary wielding the great Spear of Leonidas, unravelling the secrets of your family's history, and some of Ancient Greece's greatest myths.

Set hundreds of years before Bayek and Aya created the Assassin Order, Odyssey tells of the ideology behind the hidden group of freedom fighters. In this way, while Assassin's Creed Origins' RPG-centric gameplay shifted

ASSASSIN'S CREED: ODYSSEY

DEVELOPER UBISOFT MONTREAL ET AL
PUBLISHER UNISOFT
DUE OCTOBER 5 2018
https://assassinscreed.ubisoft.com

"One day, my Spartan, all this shall be yours."

HUNTER
WARRIOR
ASSASSIN

HUNTER
WARRIOR
ASSASSIN
17235
2574
2426
1771
16717
1036

it away from the series but still within the family, Odyssey's story completely divorces it from the traditional Assassin's Creed narrative to create an even more historically-grounded and unique role playing experience. According to Phillips, you'll experience parts of the game in the present, implying that the Assassin Order arc will tie into the overall narrative at some point, but it's clear that the team is focused on creating a fully realised beautiful Mediterranean paradise.

"I wanted to make sure we didn't give it an academic treatment," Odyssey's Creative Director Jonathan Dumont told *IGN*. "I fell in love with the concept of going back into antiquity and showing it like it was… to see that they were human and not just a statue."

From famed philosopher Socrates to mythological creatures, Ubisoft Quebec is drawing on all aspects of Greek myth and history to design a sense of realism never quite captured in many contemporary images of Ancient Greece. An over the shoulder shot of the player facing off against a Minotaur hints at Witcher-like battles with mythological beings. Colossal statues of Gods and the supernatural, and legendary ancestral weapons, populate the world. When asked whether there will be more than just the one fight with a supernatural creature, and what that entailed, an Ubisoft representative declined to comment. That said, there's a lot of potential in how Ubisoft Quebec can adapt these iconic stories of tragedy and heroism into an epic RPG narrative.

There's a beautiful vast open world to explore, either by land or by sea. Ubisoft open worlds have always felt somewhat gamefied and artificial, with points of interest defined by objectives rather than organically part of the world, but Odyssey's environments feel lived in. Adventuring outside a bustling merchant port city and making my way to a nearby cliff, I witnessed the sun setting on the horizon over the foreground of a meadow of flowers, a merchant travelling by horse and cart to his next destination, and mercenaries scouting the plains for Athenian rebels.

It's a rich, but organic setting.

THE RIGHT VOICES FOR THE JOB

After Hollywood was criticised for giving non-American roles to Caucasian Americans, Ubisoft decided to hire Greek actors for as many roles as possible. Speaking to VG247, audio director Lydia Andrew explained, "you can have a great actor who's great at accents, but you can also find great Greek actors and work with them, too."

AN ODYSSEY FOR ALL

Ubisoft has come a long way since claiming that animating female playable protagonists in Assassin's Creed Unity was too difficult and costly. For the first time in the series, the developer is giving players the choice to play as either a male or female character. Unlike Assassin's Creed Syndicate, which had you switch between the perspectives of twins Jacob and Evelyn, playing as either Alexios or Kassandra is a permanent choice, and the two are, according to the Ubisoft Quebec developer guiding my hands-on session, their own characters. While they share a similar strong-willed compassionate personality, their facial and vocal expressions in conversation are different. Playing as both, I quickly preferred the sassy abruptness of Kassandra, perhaps because she represents a different perspective in the Assassin's Creed franchise.

Another milestone in Assassin's Creed Odyssey is that players can create personalised relationships with characters, and romance male and female NPCs irrespective of their playable gender. Much like other popular roleplaying games, players interact with NPCs through a series of dialogue choices, yet the decisions you make in these conversations aren't as clearly defined as Paragon or Renegade. As Narrative Design Director Mel MacCoubrey told *IGN*, these grey decisions translate into how you approach romancing characters.

> "Just because you're clicking the heart doesn't mean you're going to get it," MacCoubrey said.

Although the team didn't want to explicitly tell the player that "X would remember that," their reactions to you are evident in how they present themselves. Being deceitful may be seen as charming to one character and unlikable to another, just as doing what is generally deemed morally right may not be universally accepted by the world of Ancient Greece.

"Just because you're clicking the heart doesn't mean you're going to get it," MacCoubrey said.

Playing as Kassandra, I played my interactions with Kyra, the leader of a small unit of rebels, as flirtatious and playful, and I felt a real chemistry between us. When I tried romancing her as Alexio, she was less responsive, almost as if she admired Kassandra's brute strength and heroics as a Spartan woman. Of course, these romances aren't always as obviously defined and you can choose to reject characters, too. According to MacCoubrey, the team drew inspiration from the romantic tragedies and comedies of the time, such as Aristophanes's Lysistrata, to capture the distinct sexual tension of Ancient Greek society.

"I would say Kyra is a mid-level romance to put it in a weird way," Phillips explained. "There are some side characters, and other characters where it's a shorter thing, but you

can still recruit people to be on your ship crew. And with some of these romanceable characters, you can recruit them to be on your ship and with you for the rest of your journey, or you can never see them again; it's sort of your choice."

"There are also family relationships which you'll make decisions about, and will impact, ultimately, who's around or who's there for help as you get further in the game. You'll see a lot of variation based on the way you've played the game."

"We're telling a story of a family that has been torn apart and a family tragedy," MacCoubrey added. "We thought it would be better to place those romances in the world, to have player's own stories to be able to develop those stories further, instead of forcing an opinion on you as a player."

THE WINE DARK SEAS

Naval combat makes a grand return as you traverse the Greek islands by sea. While combat is similar to Origins and Black Flag - in that you will be ramming and firing at enemy ships, all while singing sea shanties - you won't have access to black powder artillery given the time period.

PUTTING THE EPIC IN EPIC RPG

Early in my demo, I accepted a mission from Socrates to rescue a freedom fighter. Sneaking into the open house where he was kept, I took out each of the guards and managed to free him. As I helped him escape, he announced himself as a radical and attacked me, so, naturally, I defended myself and accidentally killed him. When reporting back to Socrates, he was disappointed to hear of what had happened, and my choices led to a discussion on ethics and morality: *Was it right to kill a man in self-defence or to let him be free to kill himself? Did he deserve to live? What is "justice?" What are ethics?* Although my conversation with the wise philosopher was short, it was perhaps one of the most memorable parts of the demo and emphasised that my choices had consequences.

From there, I tried to explore the open sea and crashed into a nearby island. I joined up with Kyra, a Delosian rebel leader with bandit group of misfits, and Thaletas, the last of a Spartan army dispatched to Delos, as they planned to attack a nearby Athenian camp and reclaim Delos from enemy territory. Kyra's and Thaletas's tactics differed - Kyra preferred the stealth approach and wanted to cull the camp's resources to weaken them, which could take time but eventually make the mission easier, while Thaletas wanted to bombard them with one direct frontal assault - and it was up to me to decide which route to take. Playing as Kassandra and wanting to see a romance between the two, I chose Kyra's plan and visited a nearby Athenian outpost and set fire to their resources.

Marching in, we raided the camp and attacked anything in our way. Kyra stood inanimate and in between objects - a game-breaking bug that lead to a Ubisoft developer restarting the console - before appearing in a cutscene bloody and sweaty from the very fight she failed to engage in. We, or rather, I, had weakened most of what was left of the Athenian-occupied state of Delos, and all that was left was one final epic battle at the beach.

Three hundred soldiers: one hundred and fifty Delos soldiers and I against one hundred and fifty Athenians, faced-off. The chants and battle cries getting louder as chaos ensued. The passionate red colours of Delos and Sparta and the blue and yellow shields of Athenians mixed in the battlefield. All that I could behold in front of me was sand particles, metal clashing and bodies falling. Dancing around the battlefield striking nearby enemies with a spear, sword, and axe, I quickly became overwhelmed. I was surrounded by four soldiers wielding a sword and shield, another taller brute carrying a large mace, and one more dual-wielding short swords.

Spartan-kicking (I believe it's called it a front kick - Ed) the heavy man, I quickly grabbed each of the men's shields and violently knocked them back with them and fired a multi-arrowed shot. I switched to my spear and struck the nimble dual-wielding soldier from a distance, switching back to my sword and shield to best prepare myself for the brute approaching me. After a gradual dodge and strike tactic, oftren accidentally attacking other nearby enemies, I took him down and was swarmed by another five. Six down, one hundred and forty-four more to go, and their powerful captain, a collosal of a man dual-wielding shiny maces charged at me as he violently pushed through enemy and ally soldiers alike like a concentrated cannon.

It was a hell of a fight.

PICK A SIDE

At its core, this is a game designed around choice and consequence. Every interaction you have causes a reaction in some way. Even small choices, like choosing to loot a presumably abandoned chest in a deserted village, have consequences. Most loot found in the world is owned by someone else, and carelessly looting a chest and getting caught will increase your notoriety and chance of being hunted by fellow mercenaries. If you're a masterful communicator, however, you can always try and recruit whoever hunts you as part of your ship crew via the deeply improved dialogue tree.

Every mission you complete influences either side of the Peloponnesian conflict, and bargaining your morals in the process can lead to economic and political gain. You can fight for honor, hunt bounties for coin, or even defy your Spartan upbringing, but ultimately the world will react to your choices. Territories, political hierarchies and economies are constantly changing, and given the war lasted for 30 years, Ubisoft Quebec has the freedom to let you change the events of the war as you see fit, while still resulting in the famous Spartan victory.

Ubisoft Quebec is building on the very solid foundations of Ubisoft Montreal's Assassin's Creed Origins, while also trying a lot of things new in the franchise, to create a refined and personal, but still epic RPG. If my concerns are resolved in time, I might finally return to the Assassin's Creed series. Assassin's Creed Odyssey is already shaping up to be the best game in the series and an experience that could potentially sit among some of the greatest role playing games of the last five years. *JULIAN RIZZO-SMITH* PC

... and the horse you rode in on!

Are we getting sick of "THIS IS SPARTA!" jokes? I really hope not...

E3 2018: **Women in Games**

Julian Rizzo-Smith looks at the growing number of female-led franchises at this year's LA trade show.

◀ Kassandra is THE canonical character in Assassin's Creed: Odyssey
▼ (left) Jade from Beyond Good & Evil 2
▼ (right) Even the hyper-muscular Gears of War is featuring a female lead.

E3 2018 encompassed the progress women and marginalised groups have made in the gaming community, while still emphasising that more still needs to be done. AAA publishers are finally taking note of fans' desire for rich female protagonists, creating more engaging blockbuster stories centred around playable female characters with a variety of personalities. Ubisoft Quebec's Assassin's Creed Odyssey and The Coalition's Gears of War 5, which were both announced at this year's show, are changing the face of notoriously male-dominated franchises with women front and center in the marketing collateral.

Ubisoft Quebec was the first to introduce more diversity in the Assassin's Creed series with the Victorian era's Assassin's Creed Syndicate, which marked both the first mainline Assassin's Creed game to offer a female protagonist in the form of twin characters Jacob and Evelyn, and feature a transgender character in the Assassin's universe. In Assassin's Creed Odyssey, the player can choose between a male and female protagonist in the form of Alexio and Kassandra. In a AMA thread on Reddit, Creative Director Jonathan Dumont told fans that Kassandra is considered the canonical protagonist, and the official novelisation of the game is based on her. However, Alexio is the character seen on the cover art, in marketing campaigns, and the statue featured in any special editions for the game. If fans want a Kassandra figurine, they have to purchase her separately.

While the series is no doubt becoming more diverse and for players of all genders, it is still tied by the male-dominated values of marketing campaigns.

Similarly, Gears of War is a series that shaped the classic dudebro shooter tropes: gritty offensive soldiers with bulky muscles, wielding chainsaw guns, and delivering such well written one-liners as "Shit yeah!". Former Gears of War Design Director and developer personality Cliff Bleszinksi once admitted that the melodramatic theme of the human condition at war in the original trilogy clashed with the brutally masculine character designs of Marcus Phoenix and his squad; and many have criticised the series for treating women as accessories to the men of the story. Since then, the series has included a female soldier in your squad, but never quite made them the lead. In Gears of War 5, The Coalition are transforming the outsider-turned-Gears soldier from Gears of War 4, Kait Diaz, into the playable protagonist. Having only just been announced and not nearly as far in development, Gears of War 5 hasn't had the time to build the large-scale marketing campaign that Assassin's Creed Odyssey already has, but it's hard to say if it will disguise its sole playable female protagonist behind her male co-stars. That said, it's refreshing to see two big, masculine franchises acknowledge their female player-base, and tell more stories about less conventional and stereotypical triple-A protagonists.

During the release of the original Beyond Good and Evil, Jade represented a sea-change in the representation of women in games: she was competent, a skilled adventurer, and her proportions were realistically designed. Female characters were seen in cutscenes as helpless damsels in distress or bystanders to the action, shown through male-gazing camera angles and with absurdly exposing costume designs. Comparing the games industry from her debut to the upcoming Beyond Good and Evil 2, which stars multiple competent, strong-willed, and interesting female characters, alongside non-conventional men in a space opera fantasy, it's clear that modern games are being made with their genuine playerbase in mind. Games aren't just for teenage to middle-aged heterosexual men, but all kinds of people, and these stories have begun to reflect that.

This discussion was one that was also reflected in the many talks, guided demos, and behind closed door presentations at the show. Female staff members, from developers to writers to PR, were more visible at E3 and proudly demonstrating their games. During demos where you can play as either a male or female character, developers actively chose to show off the world through the eyes of their female protagonist.

The extended demo of CyberPunk 2077 surprised me in many ways, with the news that you could play as a customisable male or female character. CD Projekt Red's game is described as a mature and gritty roleplaying game, but what I witnessed was something trying to appeal to a mature audience without representing issues maturely. A full nude and lifeless robot the player was tasked with rescuing was unnecessarily objectified, one of her breasts taking up a quarter of the screen as you carry her out to safety. In comparison, male gigolos you can hire in the game are shown with censored images of their naked male bodies' behinds.

▲ **The kiss that melted the hearts of queer gamers everywhere.**

On the other hand, while not PC-supported, the highly anticipated The Last of Us Part II follows Ellie, the deteuragonist of The Last of Us, and her struggles to live a normal human life after the violent acts she's committed to survive. After showing a series of violent takedowns of goons in an abandoned convenience store, the gameplay reveal trailer returns to Ellie at a dance party, falling for another girl and kissing her in what marks the first time a major publisher has included a queer kiss - and perhaps the most intimate and genuine kiss in video game history - in a mainstream presentation viewed by millions. Hearing the resounding cheering and applauding from the crowd powerfully captured that Ellie represented the progress the industry has made towards queer and female representation. With stories like these, developers are now maturing these female characters - and by extension, the games industry - into depicting fully-fledged female protagonists of their own franchises.

> "Since then, the series has included a female soldier in your squad, but never quite made them the lead."

These kinds of representation are subtlety changing how we view diversity in the games industry. It's helping change the internal structure of games and gender in game development, allowing more female employees to contribute in presenting their games to the public, while also normalising a long line of women in games to the general gaming public. This could be one of the strongest gaming trends of 2018, but we sincerely hope the industry continues to develop a wider diversity of representation in games.

There's room for everyone! PC

(virtual) BRAAAIINSSSSSS

Hands-on with Sydney's free-roaming VR experience Simosity packs plenty of promise.

In a way, this is a preview. Little did I know at the time when I bought my tickets, Simosity is only in its soft-launch phase. For those unaware, Simosity is most easily described as Sydney's answer to Melbourne's Zero Latency VR experience.

At its core, Simosity is a VR experience. But instead of standing or sitting you move around in the real world and your avatar is tracked in real-time with unnoticeable latency. This is achieved by wearing a Ghostbusters-like backpack. While it's not overly cumbersome, the weight of it combined with the headset and an assault rifle peripheral, as well as the 1km+ ground you cover in around half an hour of play time makes for a sweaty experience.

I've played it twice now, both times co-petitively. Y'see, while Simosity is fundamentally a cooperative experience, where you and a buddy work together to primarily kill zombies, there's a co-petitive scoring system that incentivises being a jerk. This can be as simple as letting your partner die (zombies swarm from multiple locations sometimes and it's tricky to keep track of ones behind you), rushing ahead to pop medicine bottles (basically free points), snaking weapon pick-ups, and/or blocking doorways to hoard zombie horde kills.

In fairness, this didn't happen to me, but the opportunity to do it is there, particularly if you're playing the Simosity experience more than once. It's quite horror-lite in terms of the scares, but there were a couple of moments that had me jumping and/or yelping. Even the simple act of physically stepping out on a ledge is apparently daunting for my brain (I froze, even though I knew it wasn't real). Ultimately, your mission is to save a scared child who's foolishly running through the Simosity Hotel, pop zombie skulls, and solve basic escape room-type puzzles.

There were some minor randomised changes between my two play-throughs, most notably with the puzzles, but the zombie felling was the real draw card. Fragging zombies is frantic and fun at first, until you learn to game it. Waves become predictable in terms of where they come from, and it's all too easy to appraise a room in terms of the best corners to make a beeline for so you can protect your back and fell incoming zombies.

It's also much closer to an arcade experience than survival-horror. That's definitely okay for a first-time run, but it'd be great to see the team add difficulty modifiers to ramp up the intensity. For instance, ammunition is unlimited on your default weapon and you never have to reload. Despite the vibrating assault rifle peripheral (which is very cool, mind you), the guns are laser-focused in terms of their accuracy and lack of recoil or spread.

> "Without giving too much away, the final fight is a nice mix of zombie adds and a tough boss."

This means your total kill count will likely be predominantly comprised of headshots. Because of the simplicity of the shooting, it means subsequent waves of zombies become easier instead of harder, especially considering one of the toughest fights is right at the start of the experience (also, death dying is a slap-on-the-wrist punishment).

Without giving too much away, the final fight is a nice mix of zombie adds and a tough boss. This is the one section of the experience where I felt I had to keep moving, instead of

A not at all spooky or zombie infested house, I am quite sure.

Would you trust these men to save you from a zombie apocalypse?

It's like a really bizarre murder sceen...

pitching a tent in a corner and picking off waves of zombies.

The movement is actually a bit problematic if you've got a big noggin like me. Both times I played, despite having a clear view at the start of the game, it didn't take long for my body and head movements to blur the focus. Blurry view doesn't impede zombie killing, but spotting hidden mission-critical items or even medicine bottles is definitely trickier.

Simosity is a VR experience I'm glad I played, and it's friendly to both casual and hardcore gamers (based on my two play sessions). The best bit about the soft launch is there's room for it to grow and change. Chatting with the team suggested this was absolutely the intention, with plans to up the player count to four in the next fortnight, then six beyond that. According to the Simosity website, the player count will eventually grow to eight, but while the space is generous for two and would likely comfortably work for four, the chokepoints in certain sections of the experience might not work beyond that.

The team already knows this, though, and talked about tweaking the experience further to accommodate a larger player count, as well as adding more games. This last point feels most important given the $77 asking price (per player), if the team wants players to come back more than once. Beyond this, difficulty modifiers and other randomised elements on familiar experiences would absolutely tempt me to take it for another spin.

In its current form, Simosity is far from the perfect free-roaming VR experience. But there's enough potential in what's on offer now to say it's worth taking for a spin in the coming weeks and months. The team seemed genuinely interested in player feedback, so the chances are good that the later you leave it to play, the better the experience will be.

NATHAN LAWRENCE PC

Games 272

YOUR GUIDE TO PC GAMES

slaps roof of games industry

"This thing can hold so many different experiences!"

I love how eclectic this list of games is. I mean, there's usually a difference in quality - it's kinda expected that not everything can be a ten out of ten (in fact, the debate about that even being possible is one of these things that drunk reviewers often argue over) - but that the scope, scale, and intimacy of storytelling on offer this issue is wonderfully all over the shop.

We've got indie experiences that are short but perfectly formed, while offering some remarkably deep feels, and other indies designed around a short, sharp dose of pure destruction. We've got big games that made a splash at previous E3s but have kind of fallen short, and unexpected surprises... I mean, I regularly fire up Wreckfest and I - as a rule - hate non-sci-fi racing games.

Speaking of which, since this is the last page I'm writing... who wants a quick lap on a lawnmower?

David Hollingworth
Editor

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POWERED BY
REPUBLIC OF GAMERS

1

10

SCORING SYSTEM | PCPP scores its games on a 1 to 10 scale. The higher, the better – though 10 is by no means a "perfect" game. We're not convinced such a thing exists, so consider a 10 a masterpiece of PC gaming, despite its inevitable flaws. A 5 is a decidedly average game; one that doesn't excel in any particular area, without being an affront to our senses – the ultimate in mediocrity. Below this, you'll start to find the games our reviewers suffered an aneurysm getting through; above it, the titles truly worth your time and money. And remember: a score is only a vague indication of quality. Always read the full review for the definitive opinion!

Wreckfest

I don't know much about racing games, but I know what I hate. And I don't hate this!

DEVELOPER BUGBEAR ENTERTAINMENT • **PUBLISHER** THQ NORDIC • **PRICE** $US44.99 • **AVAILABLE AT** STEAM
store.steampowered.com/app/228380/Wreckfest

Generally, when it comes to racing games, in my opinion there's Wipeout, Mario Kart, and then everything else just… Well let's just say I'm no real racing fan. I can't even drive.

In fact, I'm the last person who should be getting excited over a racing game, but here we are.

Wreckfest is a goddamn DELIGHT.

It kind of came out of nowhere for me, despite it's years in early access (see above, re: racing noob), so getting into it now makes it feel like one of the most polished games I've played in years – period. It's striking to look at, features a banging rock soundtrack, and looks absolutely amazing. But even more amazing is that it's a racing game that's gotten me utterly hooked without being about zero-g hovercars or mushroom laden racetracks.

And despite the name and demolition derby focus, this *is* a racing game. Sure, there are 'tracks' that are very much focused on destruction, and the various lawmmower modes – yes, you can race in, and cause hilariously over the top carnage in, a ride-on lawnmowers – are pure spectacle, but most everything comes down to racing nerd purity.

The truly exceptional thing, however, is how approachable it all is. By default there's a tonne of racing assists turned on, and it'll surprise no one that I have not bothered to turn any of them off. I leave that kind of malarkey to my colleague Ben Mansill, who – with his epic sim-racing rig and hyper-realistic peripherals – immediately dove in to the game in its hardest, most demanding settings (and loves the game as much as I do, which is really something).

Me? I just want to race, smash some shit up, and not have to bother with a dedicated controller. Yes, I'm playing a racing game on my keyboard. In fact, I'm playing a racing game on my keyboard and I'm only using the cursor keys. But with just those four controls, I still need to tune my car to the track. For gravel and mud trucks, I need to soften the suspension to keep road contact; for proper racing surfaces, I want stiffer suspension. This is stuff that used to not only bore me silly, but also intimidated the heck out of me in my previous forays into racing games.

Here I am totally invested. I aim for the proper racing line on each corner, take care to brake into a curve and accelerate out, and all the while know that if I really need to, I can just ram that damn car in front of me off the track and no one is going to care.

The game's damage model is forgiving at first, but constant contacts can destroy your engine, twist wheels out of alignment, or see you losing braking pressure. Wrecks and other debris litter the track, so each lap gets more and more like threading a needle – especially when it's a figure-eight track, or a track that loops back alongside itself. Resets are easy, but cost you places, or you can just restart.

You can unlock new cars, and upgrade various car parts and bits of armour in what is basically a balancing act between horse-power and weight, but really, it's all about that pure racing adrenaline.

And smashing things.

DAVID HOLLINGWORTH PC

Well that's your problem right there.

> Wrecks & other debris litter the track, so each lap gets more and more like threading a needle.

WHY SHOULD I CARE?

+ You believe winning isn't everything…

+ … but that smashing things is

+ You really want to run over a guy with a lawnmower

OR TRY THIS:

FLATOUT 2
BUGBEAR ENTERTAINMENT 2006
- Such collisions!
- 10+ years old

BURNOUT PARADISE
CRITERION GAMES
- Such collisions!
- Actually hard to think of any

PROJECT CARS
SLIGHTLY MAD STUDIOS 2015
- A bit more sim-like
- A lot more sim-like

VERDICT:

A deceptively realistic racing game that doesn't care if you want to ignore the details and just ram every car on the track.

9

Vampyr

Blood on the streets, a surgeon in the sheets

DEVELOPER DONTNOD ENTERTAINMENT • **PUBLISHER** FOCUS HOME INTERACTIVE • **PRICE** $US49.99 • **AVAILABLE AT** STEAM
www.vampyr-game.com

The older I get, the more I suspect I'm going to be saying this quite a lot about games:

"I really wanted to like X, but…"

So, let's get this out of the way now, shall we? I really wanted to like Vampyr, but all it really made me think as I was playing it was that I'd much rather be playing Dishonored instead.

Now, to be fair, it did make me also think how much some of Vampyr's mechanics would really add to Arkane Studio's game of leaping assassins stabbing people in the face. Vampyr does a lot of very cool things, in a very cool setting, but I feel it also squanders a lot of those mechanics in trying to tie them all together in a game about, well, vampires.

For a game about a doctor infected by a disease way more complex than he's used to, London in the years after the Great War is a wonderful setting. The world has seen militarised murder on a scale never seen before, and the flu pandemic is just kicking off, making the dark, sooty streets of the city perfect feeding grounds. Yet, for all of that, Vampyr's London – made up four discrete districts inspired by real locations, but compressed for the sake of gameplay – feels disappointingly homogenised. It could be London from any period in the 1800s to the early 20th century, and the fact that the game takes place entirely at night (because sunlight will kill you, natch), doesn't help. A certain degree of grim-dark is expected in a game about gothic vampire horror, but Vampyr possibly goes a bit too far. There are some stand-out locations that change things up, like the hospital that forms the hub of the first act and main area, but otherwise it's all winding alleys that seem indistinguishable from each other in the game's overhanging gloom.

"I call this my pointing scalpel!"

> "It's a great idea, but in practice it feels more like you're simply checking details off a list."

WHY SHOULD I CARE?

+ You do not drink… wine

+ You need to be invited into people's houses

+ You can't stand garlic… HEY WAIT A MINUTE!

The people that inhabit these districts are more interesting, and this is where one of the game's key mechanics comes into play. As the just turned Jonathan Reid, you're pretty much always hungry, and all your newfound powers rely upon blood to use – more importantly, you won't be able to unlock or improve those powers without dining out on some more or less innocent people. The game's built-in difficulty curve is based around the need to feed, which in turn causes your current district to become more chaotic and dangerous, or to protect those around you – in which case you're more or less a good guy and people like you, but the game's combat becomes that much harder as you lack the more effective fighting abilities.

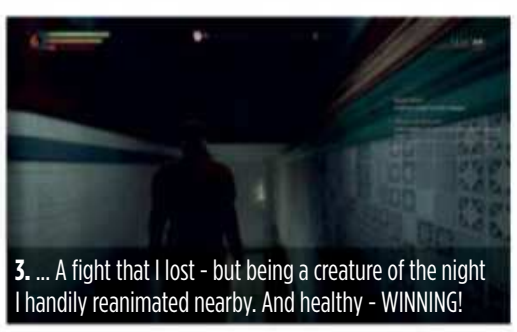
It's a lovely mechanic, made more nuanced by the fact that as you either heal your potential victims, or simply learn more about them, they become more useful to you to feed from – or Embrace, as the game confusingly (if you're a fan of Vampire: The Masquerade like I am). It's a great idea, but in practice it feels more like you're simply checking details off a list. The rather stilted animations don't do the game any favours in this department, nor some very stilted writing – you know you should care about all these NPCs, and the various ties they have with the community

SEQUENCE

DEATH IS NOT THE END

1. I am badly hurt, and need rest or blood.

2. Well, I better fight this guy...


3. ... A fight that I lost - but being a creature of the night I handily reanimated nearby. And healthy - WINNING!

around them, but sometimes it's hard to see why.

The game's focus on the central moral quandary of being a vampire is further diluted by the game's focus on combat. The majority of conversations are simply a matter of clicking through every dialogue option – combat is where the game really gives you a lot of toys to play with, with a range of active and passive vampiric abilities to unlock. But they're all about fighting, and while the game effectively 'punishes' you for dealing harshly with the fine folk of London, drinking blood while in combat is essentially harmless. Nor can you really avoid a lot of the fighting. Mechanically it's sound enough – you lock onto enemies and then whale on them with weapons in either hand, damaging and stunning by turns, drinking blood to power up your abilities, then rinse and repeat. Different weapons offer different effects, and finding the right combo of main and off weapon (I rather favour a sword and pistol, but I'm old-school like that) is satisfying. The execution though is a little disappointing, though, especially if you are trying to preserve the community around you. Boss fights drag on interminably, and it often feels less like a fight as a massive and no doubt alarmingly unsanitary blood-swapping session as you fight, feed, heal, and fight again.

The game is, in nearly every aspect, nearly good. Great, even, but nearly everything it tries to do has been done better elsewhere, which adds up to a particularly disappointing experience. I really quite like the game's protagonist, Doctor Reid – he's an angsty veteran of the First World War, whose tortured embrace sees him become EVEN ANGSTIER in the game's opening hour – and there are some elements of strong writing, and I am kind of curious to see where his quest for answers (who turned him and why) leads… But not nearly enough.

Vampyr is a game that is aiming to for its whole to be greater than the sum of its parts, but those parts simply don't add up, and even fall just a little too short to be truly likeable. *DAVID HOLLINGWORTH* PC

SPOTLIGHT

I'VE COME TO SUCK

1. When you're health gets too low the world gets this washed out look

2. You have an array of weapons, with two ready to go at all times

3. Plus some neat extras which can powers that can make a big difference

4. Blood... the vital essence of unlife that I crave...

5. ... a creature of the night. How they... stumble about all kind of dumb.

6. A waste of perfectly good blood.

OR TRY THIS:

VAMPIRE: THE MASQUERADE - BLOODLINES
TROIKA GAMES 2004
- ⊕ Amazing characters and storytelling
- ⊖ Has not aged well

CASTLEVANIA: LORDS OF SHADOW
MERCURY STEAM 2013
- ⊕ SUCH ANGST
- ⊖ The angst gets tired

LEGACY OF KAIN: DEFIANCE
CRYSTAL DYNAMICS
- ⊕ Double the fangs!
- ⊖ Long in the, er, tooth

VERDICT:

Some marvelous mechanics don't add up to enough to detract from stilted writing, an overly grim aesthetic, and repetitive combat.

7

Unavowed

Sacred Vow

DEVELOPER WADJET EYE GAMES • **PUBLISHER** STEAM • **PRICE** $14.99 • **AVAILABLE AT** STEAM
www.wadjeteyegames.com/games/unavowed/

There is a sequence, late in Unavowed, where everything finally clicks together. The choices you've made thus far are drawn into sharper contrast, the story turns a fascinating corner, and the reasoning behind numerous design decisions is suddenly clear. The scope of the game's ambitions is brought into focus, and it's a wonder to witness. This is not a spoiler, but it's worth knowing up front that Unavowed – a game that sometimes feels constrained by its focus on choice and narrative over puzzles – has tremendous payoff. It's a good adventure game that becomes great if you stick with it.

Unavowed opens with you choosing the gender and previous occupation of your character – choices that will affect how the game plays out – during an exorcism. Your protagonist is the one being exorcised; for the past year they've been inhabited by a demon and have left a trail of death and destruction behind. The demon escapes and you're promptly enlisted into the New York chapter of the Unavowed, a team of 'void-touched' heroes that fights back against sinister supernatural forces.

Wadjet Eye Games is best known for the Blackwell series, and Unavowed is a similar point-and-click experience. It's a simpler game than many others in the genre, divided roughly into chapters that don't necessitate much backtracking or pixel hunting. As you move between locations, trying to undo the work of the demon, you're unlikely to be stumped; many puzzles can be solved simply by talking to everyone, or by interpreting obvious clues. Your ability to interact with the environment is parred right down: few items on any given screen can be directly interacted with, and it's rare to find yourself with a particularly stacked inventory, or holding an item that doesn't have an immediate, obvious function to serve.

I don't know much about art, but I know that statue creeps me out!

> "The wider supernatural world is fleshed out enough that you feel like a part of something bigger"

WHY SHOULD I CARE?

+ You want an interesting story in a great setting
+ You're in a nostalgic mood
+ You love a good voice performance.
+ You like the idea of a choice-based adventure with a stronger puzzle focus than Telltale.

But the real pleasure comes from seeing how the members of the Unavowed bounce off each other, and finding unique solutions based on your character load-out. By midway through the game you have a party of five, but only three can go on each 'mission', and puzzle solutions will change slightly depending on who you take. At times a mission will be changed enormously by your character choices. This also extends to your backstory – my character was an actor, which became such an important, organic part of the story that I can't imagine it having been any other way.

It's hard not to grow attached to Eli, Mandana, and the rest of the Unavowed crew. The script does a fantastic job of building up the world they live in, and each character is deeply developed through your conversations with them. The wider world of the supernatural is fleshed out enough that you feel like a part of something bigger, which is an impressive feat for a small-scale indie. Unavowed isn't the most challenging adventure game, but the tale it weaves is personal, surprising, and quite delightful under all the bloodshed and damnation. *JAMES O'CONNOR* PC

OR TRY THIS:

THE BLACKWELL BUNDLE
WADJET EYE GAMES, 2006-2014
- Strong ghostly adventures
- The second one is a bit weak

KATHY RAIN
CLIFFTOP GAMES, 2016
- Inspired by Twin Peaks
- A very slow burn

RESONANCE
WADJET EYE GAMES, 2012
- An extremely good 'memory' puzzle system.
- I should have given it a 9/10

VERDICT:

A terrific plot, excellent characters, and fantastic worldbuilding elevate the game's unexciting puzzles.

8

msi

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Ice Caves of Europa

I'm afraid I *can* play this, Dave.

DEVELOPER IO NORMAL • **PUBLISHER** IO NORMAL • **PRICE** $US9.99 • **AVAILABLE AT** STEAM
ionormal.com

Sometime in the near future, a hail of asteroids smashes into the surface of one of the most mysterious bodies in the solar system – Jupiter's icy, yet possibly watery moon, Europa. On Earth, our best and brightest decide this is a great opportunity for exploration, so a probe is sent to investigate. It's a pretty hard sci-fi premise, but Ice Caves of Europa manages to marry that sense of cutting edge, but plausible technology with a touching and at times challenging narrative.

I've got to be honest – the thing I love most about the game is just how much I got attached to the game's protagonist, an artificial intelligence called Verne. Ice Caves dives straight into some of the deeper questions that science fiction can ask, while also walking the new player through the game's tutorial. While the probe carrying Vernes' drone body – the Dragonfly – to Europa is in transit, Verne's in a simulation learning to pilot the hardware. Once the training is complete, it will be beamed through space to its icy destination.

And the training is… well it starts off simple, but as the game progress, and you're tasked with new flight modes and new equipment, the difficulty ramps up appreciably. You control the Dragonfly's thrust in a couple of modes to begin with, maneuvering the drone through 2D environment to hover in waypoints for a set time to trigger them – this later becomes the mechanic for scanning the environment and a lot more, and is an elegant way to make simple controls feel like a much more diverse set of skills are being deployed.

Once on Europa, you'll be flying between a recharging base station and directed from point to point by an orbiting satellite – each with their own controlling AIs. And every now and then, you'll also be downloaded back to Earth for new training – each time, Verne seems more than a little confused, quite aware that his free will really isn't all that free. At the start of the game, even his memories are being withheld, with the intention that they can simply be re-uploaded later.

Oh, and huge respect to Io Normal for the names these AIs have been given. Alongside Verne, are Wells and Banks, named after two other luminaries of science fiction. Bravo. By comparison the human characters you encounter seem distant and at times almost antagonistic. Verne might exclaim that something sounds dangerous, but the technicians training them don't really care.

But you certainly will, and as you get deeper into Europa's subsurface, things get downright sinister.

In a lot of ways the narrative of the game trumps the actual gameplay. Europa's environments are evocative, but can be a little repetitive, and some of the flight modes are downright punishing, especially if you're playing the game in short bursts and lose the feel of flying the Dragonfly. But Verne's charm and the deeper mystery beneath Europa's surface make this indie gem more than worthwhile.

DAVID HOLLINGWORTH PC

"It's the garden spot of... *checks notes* Europa!"
The Dragonfly will proceed to the marked entry point.
Sophie
X Next
Y Skip
Enter the cave and colect samples.

> In a lot of ways the narrative of the game trumps the actual gameplay.

WHY SHOULD I CARE?

+ Space travel is your jam
+ You prefer robots to humans
+ You love drones

OR READ THIS:

Ice Caves is a pretty unique game, but given some of its references, here are some books and stories to read to get up to speed.

JULES VERNE – JOURNEY TO THE CENTER OF THE EARTH
1864

H.G. WELLS – THE SHAPE OF THINGS TO COME
1933

IAIN BANKS – EXCESSION
1996

VERDICT:

Slick controls, great writing, and a solar-system-wide mystery to unravel – what's not to love!

8

Antigraviator

Where's my Firestarter? Twisted Firestarter?

DEVELOPER CYBERNETIC WALRUS • **PUBLISHER** ICEBERG INTERACTIVE • **PRICE** $24.99 • **AVAILABLE AT** STEAM
www.antigraviator.com

Antigraviator is one of those games that wears its heart upon its racing sleeve, and that very definitely belongs to Wipeout series of games made popular on various PlayStation iterations – a game that happens to be that rare racing game I am madly fond of. And while Antigraviator may not bring much new to the genre, it's a loving enough remake that it's easy to sink some time into.

It's great in short bursts of intense racing that are guaranteed to – let me check my wrist – yes, definitely getting the old pace racing. But the game lacks some of the depth that allowed "just one more race" in Wipeout to turn into all night gaming sessions.

The biggest issue is the way Antigraviator's powerups work. In many similar racers, powerups are varied and often require excellent timing to use well – unless we're talking Wipeout's Quake, in which case fire away and watch the chaos happen! Antigraviotor's powerups are called 'traps', and are often much more environmental in effect, placing something on the track that you or other players have to avoid. Using one shields you for a moment, so you can charge on through your own rockslide, but they're kind of lame – they'll generally just slow you down and a skilled pilot can easily dodge most of them. Plus, you only get them for a limited time – if you're unlucky to pick one up and there's no one around to use it on, you lose it.

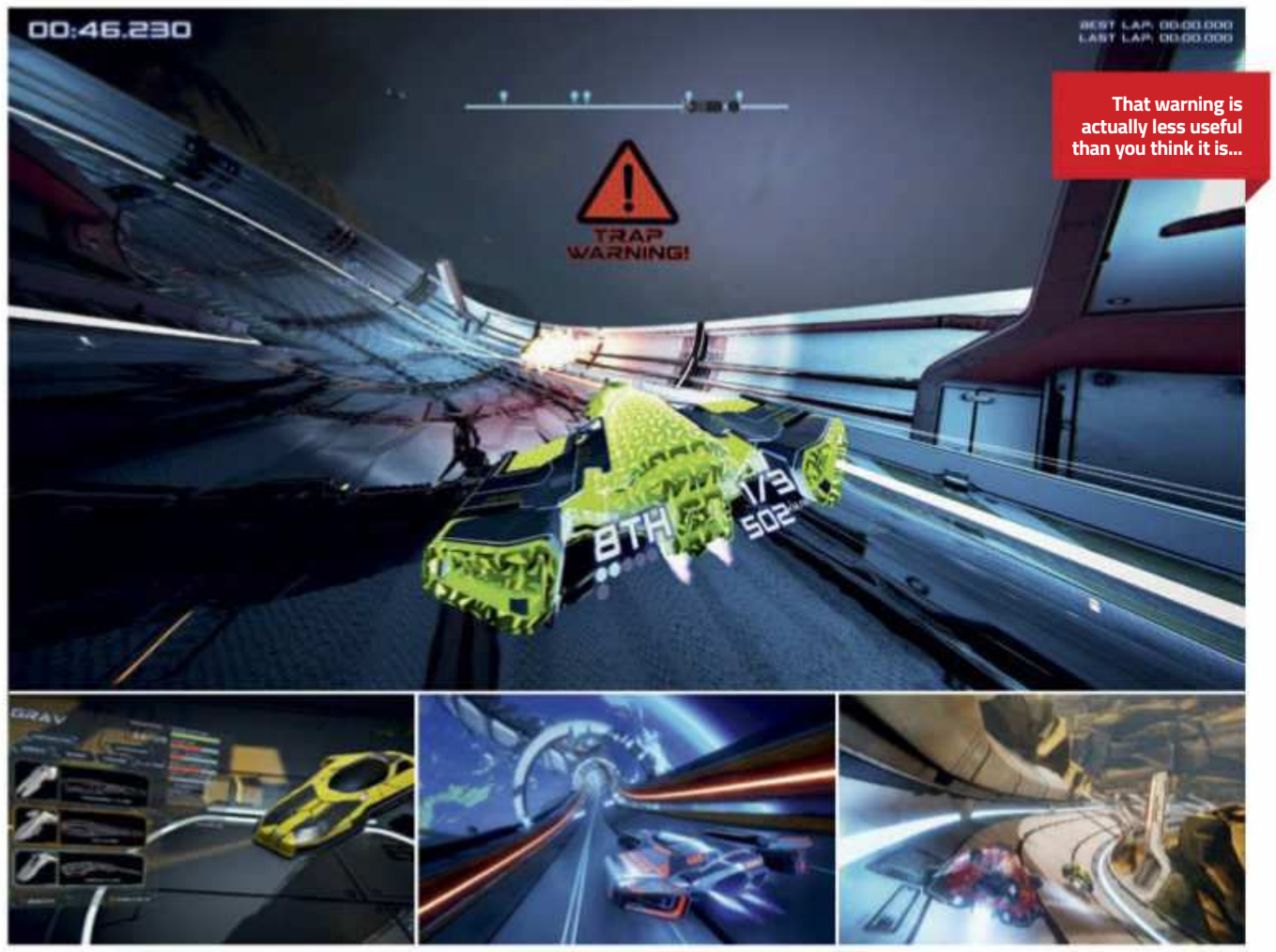
This system forces you to consider traps not so much as strategic assets, but randomly acquired bursts of chaos.

Thankfully, the meat of the game – the racing – is just fine. Controls are wonderfully precise, and you can even play pretty well on keyboard. A controller is better, but you're not going to feel penalised if you lack one. The game also doesn't have a hard limit on how fast you can go, and not only are there the usual accelerator pads paced throughout each track, you can also pick up extra boosts to use as you see fit. By combining a precise racing line and stacking on speed boost pickups, you can achieve some truly ludicrous velocities that can put you way out in front of the pack.

But this introduces its own challenge – the faster you go, the less time you have to react to track conditions, andAntigraviator. This is a game that will reward track memorisation.

As well as online play in three different modes, there's a rather vanilla singleplayer campaign where you need to place first in each of four races before you progress to the next league. There are fifteen tracks all up spread around various different worlds, though the admittedly attractive backgrounds are pretty hard to pay attention to when you're blasting along an outwardly curving piece of track at over 500mph. Each track can be raced in reverse, too.

Antigraviator is certainly not bad, but it doesn't get far above the bar of a passionate homage to become a great game in its own right. And for the relatively cheap asking price on Steam, that's no bad thing. *DAVID HOLLINGWORTH* PC



That warning is actually less useful than you think it is...

> Controls are wonderfully precise, and you can even play pretty well on keyboard.

WHY SHOULD I CARE?

+ Even an average WipeOut clone is still good
+ You have a need for speed
+ You love sudden changes in perspective

OR TRY THIS:

WIPEOUT 2097
PSYGNOSIS 1996
- Console only
- STILL THE BEST

FORMULA FUSION
R8 GAMES 2017
- Everything's unlocked
- Still a clone

UNPOSSIBLE
ACCELEROTO 2015
- A unique antigrav racer
- Mobile port

VERDICT:

Fast, intense, adrenaline pumping stuff... but without that special something that makes it a true Wipeout successor.

7

This Is The Police 2

This time, call 9-1-2

DEVELOPER WEAPPY STUDIO • **PUBLISHER** NORDIC GAMES • **PRICE** US$14.99 • **AVAILABLE AT** STEAM
N/A

The original This is the Police was an interesting concept that didn't quite come together. You played as Jack Boyd, a corrupt police captain, and had to decide how far you'd go and what you'd willingly compromise on to build up the cash reserves needed for your impending retirement. Reactions varied somewhat, but most agreed the game did not live up to its full potential, and that its portrayal of police corruption as a necessary evil was a real problem. The game presented serious social issues but rarely gave the option to respond to them, portraying racism, sexism, and other issues of corruption and discrimination as inherently insurmountable.

It's unfair to expect everything to be The Wire, but the sheer weight of the institutional problems with the American police force are too heavy for so flippant a game. But a sequel, many of us believed, could really dig in properly and deal with where this corruption comes from and what it means, rather than letting it serve as window dressing for yet another story about a lousy old white guy being white, old and lousy. These mechanics could be used to actually say something.

Unfortunately, that's not what we've got. This is the Police 2 feels like it was made under the mistaken belief that the original game was universally beloved, and that what people wanted was, essentially, more of the same with a few new ideas thrown in. It's an exhausting, mean game without any of the commentary that could have elevated the material.

The set-up is promising – we've got a new sheriff, a woman in charge of her father's old district of Sharpwood. We've got a Fargo vibe and a woman who seems poised to stand up to the department's sexism, one with the weight of expectation on her shoulders. Here's a plot that, while awkwardly written from the first cutscene onwards, is inherently compelling. But then in the opening half hour Jack Boyd inexplicably returns, and the game is suddenly all about him again. Boyd is not on anyone's list of favourite game characters, and no one came away from the original game wondering what happened next with him. It would have been far wiser to break away from the original and tell a new story.

> It would have been far wiser to break away from the original and tell a new story.

Jon St John (the voice of Duke Nukem) returns as Boyd, and he's a natural fit for the character. His gravely recitation has more nuance than his more famous role, and he manages to imbue the character with some degree of gravitas. But it's impossible to care about Boyd, a corrupt shit whose story we've already heard. His trials and tribulations, his woes and fortunes, and his ridiculous rise to power in the Sharpwood police station are not the least bit compelling. This is the Police 2 drips with overindulgence, with an overwritten script and cutscenes that go on and on and on.

The gameplay loop is very similar to what we got in the original game, as you sit at your desk and assign cases each day. As reports of crimes roll in, you assign your cops to them based on their 'ratings'– if a case comes in that requires a total score of 1000, for example, you can send two cops with a 400 rating and then one with a 200 rating. Once the cops you've sent out arrive at the scene, you'll have to make text choices to determine the actions they might take. You want to aim for few to no casualties when possible, but now and then your cops will fail, get

WHY SHOULD I CARE?

+ Actually, you really did love the original

+ You want a good case study of why games actually should directly engage with politics

+ You have read all of your James Ellroy novels five times already

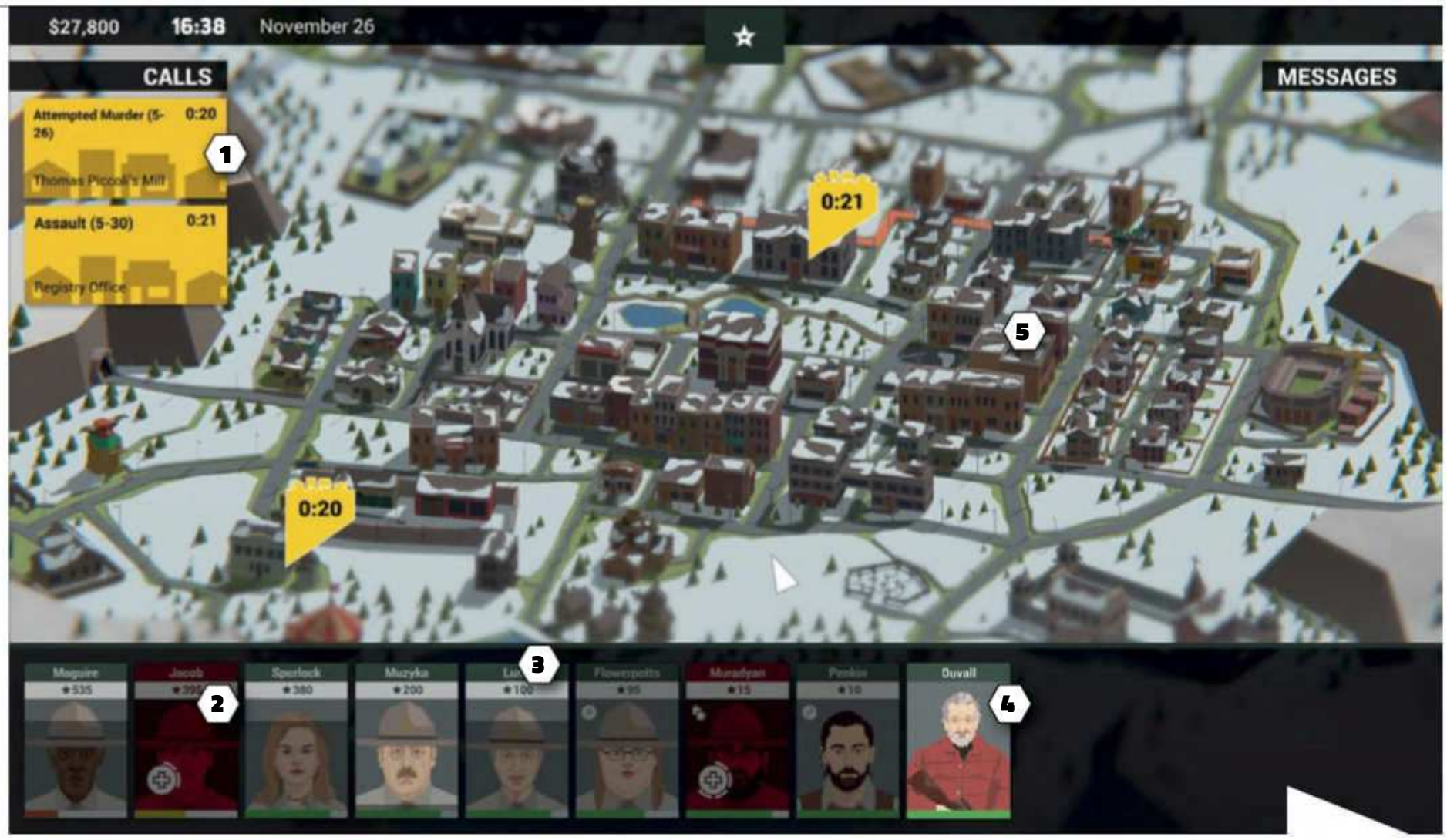
SEQUENCE

COP SHOP

1. Rolling up on this hostage situation with a full squad makes it a bit easier.

2. There's lots of bad guys in here – luckily their cones of vision are extremely limited.

3. Not pictured – me discovering too late that a flashbang in one room will alert the hostage taker in another.



injured, or even die arbitrarily. Your numbers will be stretched thin, as cops also need to be spared for investigations and general jobs around town.

Several members of your force will be useless, and there's not a lot you can do about this beyond sending them on a lot of cases to very slowly level them up. Even then, the highly rated ones will have issues: one of my best female cops refuses to work with men, while my highest rated man refused to work with women. Several of them will repeatedly come to work drunk, and on some days half your staff simply won't show. There is no simple way to improve this behaviour, or to clean house. The gap between what you're doing and actual real-life police work becomes more of an issue over time, as the game's internal logic is inconsistent.

That's not to say that things are all bad. The game is strangely moreish, and as each in-game day dawns you feel like perhaps this is the day that you turn things around (even though the game's brutal unpredictability means that it's probably not). The most major new addition is the occasional, legitimately compelling turn-based strategy segments, in which you send your squad out to deal with major crimes. Your troops, who are equipped with weapons assigned at the start of each day and perks earned through good police work, are sent out into permadeath battles that are tense and strategic in a way the rest of the game isn't. Moving slowly through a dangerous situation, having your cops switch between cover and weighing up your options, can be exciting, and in the middle of a shoot-out the game's deficiencies melt away for a moment. Unfortunately these moments are few and far between, and whether you're well-equipped to actually send your squad out on these calls is a matter of luck more than anything.

This is the Police 2 feels like a game that hasn't realised that it has nothing to say, but it is, at least, a strong case study of the value of good criticism. It's the sort of sequel a developer makes after completing ignoring all the reviews of the original, a game that offers changes and tweaks but few meaningful improvements.

JAMES O'CONNOR PC

SPOTLIGHT

JUST THE FACTS, MA'AM

1. Which cases you prioritise are up to you – you'll get better at spotting obvious false alarms.

2. Jacob is injured here. She would later die in a very stupid, irritating way.

3. A cop needs to return to the station before being sent off on the next case, which seems arbitrary.

4. The team sniper is given curiously little to do in the game.

5. The town map is rendered nicely, but there's little real sense of place to the game.

OR TRY THIS:

THIS IS THE POLICE
WEAPPY STUDIO, 2016
- Faults are easier to forgive
- But they're still there

XCOM 2
FIRAXIS GAMES, 2016
- Great, brutal strategy
- 95% chance to hit... missed.

LA COPS
MODERN DREAM, 2014
- Hands-on policing
- Actually extremely bad

VERDICT:

A wrong-headed sequel that doesn't really address most of its predecessors' problems.

5

Wild West Online

Once upon a time in the west - but bad!

DEVELOPER DJ2 ENTERTAINMENT • **PUBLISHER** WWO PARTNERS • **PRICE** $US29.99 • **AVAILABLE AT** STEAM
www.playwwo.com

There's just no easy way to say this, so I'm going to be blunt – VERY blunt.

Wild West Online – a game that I have really been looking forward to for some time – is just not very good.

Actually, wait, that's not blunt enough. It is bad, and while I am sure that many people have put in a lot of work, the fact remains that this is a game that has no right being in full release at this point in time, with a price tag of $US29.99 on Steam.

They say "show, don't tell" is the best way to tell a story, and while that's a little hard to do in type, let me at least describe my first ten minutes in the game in brief: I could not find a quest giver, or literally anything to do. There was a faction reward waiting over a hill and some walk away, but here I was, in a dusty frontier town. I talked to the sheriff – surely he has work for me!

No, just a badge.

Okay, I'll go fight crime, but given I cannot find or even see another living soul, I wonder if this game is some kind of strange purgatory – like, an unofficial sequel to some other Western, where if you die this is the semi-hell you end up in. I walk into the saloon, and the general store, and while there is stuff to buy – for instance, I start the game with a pistol, but no ammunition, which seems an oversight – something starts to become apparent.

These guys really, REALLY want my money. Not the in-game currency, which soon starts to disappear, but real dosh, and right now. Want a better gun? You better level, and you can level faster if you… SPEND MONEY. Want better clothes? You can SPEND MONEY for that.

Hell, character creation is so dreadfully locked down and I can't even play as a woman. It's locked…

> So I opened one up and… squirrel meat? A prairie-lion skin? Beaver meat?

WHY SHOULD I CARE?

+ THERE IS NO REASON YOU SHOULD CARE

+ Okay, maybe if you hate beavers

no doubt unless I SPEND SOME FUCKING MONEY.

But hey, some of my favourite games are built around this model, and I've certainly dropped enough dosh in World of Tanks or even in PUBG (look, I REALLY wanted those particular pants, okay), that I figured the game may still be playable on the cheap.

So I keep exploring the starting town, hoping for… a quest? Someone to talk to that isn't trying to make me spend my next month's rent money? A random animal to shoot for fun? I check out the map, and there's a farm nearby, so I head to that.

HOLY SHIT, GUYS, A QUEST! Of course, it's just one – in World of Warcraft I'd be on my fifth batch of dead things and fetch quests by now – and yes, it's a quest to kill some beavers (really, beavers?!), and bring this dude back the pelts. He even gives you a trap to catch them. But there is also a catch to the catching of these elusive and apparently offensive beavers.

The traps also catch other random things, based on a timer. Now, I should point out that I couldn't even work out how to deploy the damn thing, but someone could, as there were others around, and you could wait for them to tick over and provide you with your loot. So I opened one up and… squirrel meat? A prairie-lion skin? Beaver meat? The fuck meat?

Because yes, of course the traps produce random loot. This is what passes for 'content' in this damned game, waiting for invisible animals to

SEQUENCE

LONESOME DOVE

1. Ah! A town is under attack!

2. Ride like the wind!

3. And… this is the only thing there. Not even people…

walk into your alarm-clock trap, and neatly expire.

I guess that explains why the entire farm was littered with squirrel meat.

At this point, I realise that my earlier thoughts about the game being one big cash grab are confirmed. A level 25 player rides over the hill, and kills me with a single shot. The game can't tell me where to find stuff to do, but it can proudly tell me that some guy with 'penis' in his name has shot me from 17 meters away. Good to know.

It's at this point, going over the game's Steam page to make sure it is in fact in full, retail release – and it is – that I noticed the game's pivot. A few weeks before release it was still touting itself as a more rounded MMO, with PvE content, but now Wild West Online is purely open PvP multiplayer, built around timed events that players can fight over for one of two factions. So, essentially, if you don't want to be one-shotted by ForeSkinGuy69 over and over again, you not only need to buy the game, but you need to buy into the monetisation to get yourself onto something close to an even playing field.

I don't know how the game has gotten to this point, but essentially it really feels like someone's pushed the game, turned it into a pay-to-win grief-fest, and hoped to recoup some of the losses from the game's production. The sad thing is, I'm sure there are good people who really do need to make money back.

But I'm also sure you should stay away from this game with extreme prejudice. Frankly, I'll be surprised if it lasts out the year, if that; which is a mighty big shame for a game that seemed like it had so much promise.

DAVID HOLLINGWORTH PC

SPOTLIGHT

EVERYTHING YOU NEED TO KNOW ABOUT WILD WEST ONLINE IN A SINGLE SCREENSHOT

1. A pile of horseshit.

OR TRY THIS:

CONAN EXILES
FUNCOM 2018
- Better than WWO
- Still not that great

WESTERADO
OSTRICH BANDITOS 2015
- Actual cowboy content
- Hope you like retro graphics

HARD WEST
CREATIVEFORGE GAMES 2015
- A strategic take on cowboys
- Yeah, the AI SUCKS

VERDICT:

Well, pardner, I'd suggest you ride far, far away. Buy an Xbox and wait for Red Dead Redemption 2 if you have-ter.

3

The Forest

Oh, my, the horror

DEVELOPER ENDNIGHT GAMES • **PUBLISHER** ENDNIGHT GAMES • **PRICE** $US19.99 • **AVAILABLE AT** STEAM
endnightgames.com/games/the-forest

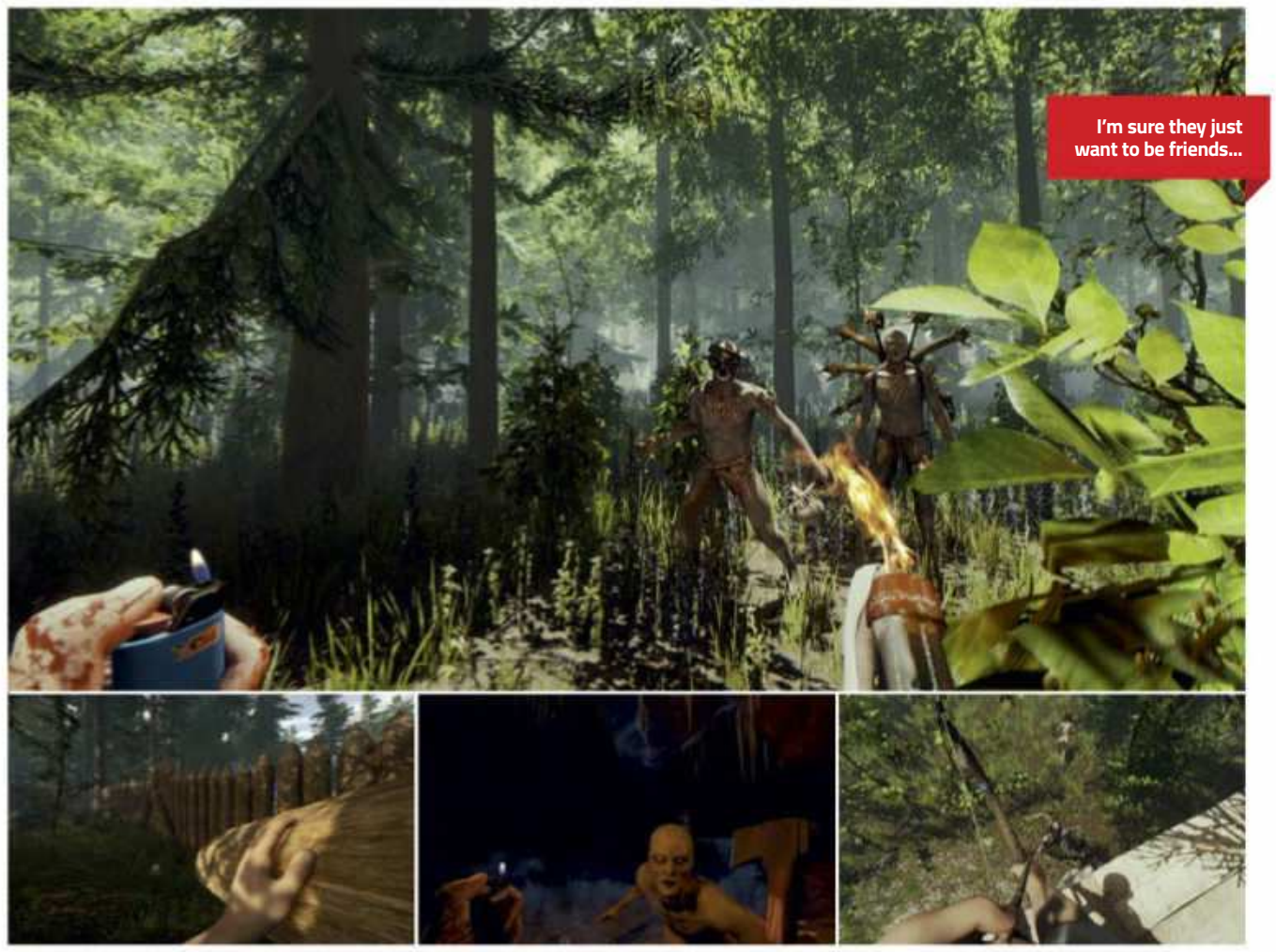
I've had a love-love relationship with The Forest since I first bought it in 2015. At that stage, despite its Early Access state and complete lack of a story, the core gameplay loop was incredibly compelling. I have incredibly fond memories of spending an entire night in the ocean, risking the potential of sharks (which, as I later discovered, weren't in the game at that point) rather than dealing with the howling horrors that lurked in my base above.

Fast forward a couple of years, and I revisited The Forest with a few friends, playing around 20 hours over the course of two days. By this stage, The Forest had a story, and that story had us *hooked*.

Despite the addition of a story, I have other friends who've played and love The Forest but who have no idea about the core storyline. Sure, the plight of your character is obvious from the start—save your son Timmy, who's snatched from your crashed plane by a man covered in red paint—but there's a more pressing concern that'll take up the vast majority of your time in The Forest, particularly on higher difficulties: survival.

This is, after all, a survival game first and foremost, which means you need to manage hunger, thirst, warmth and shelter (the latter mostly for saving and sleeping), not to mention the looming threat of death at the hands of the hostile inhabitants of the island on which you're stranded. There's a deep crafting system at the heart of the game, which covers everything from smaller survival items like spears and bows to larger ones like houses or even the option to patiently build an entire village.

For fans of the latter, there's a way to play The Forest without the many threats that dwell above and below this mysterious island. For everyone else, there's a compelling survival experience that rewards the curious player seeking narrative answers.


I'm sure they just want to be friends...

> For everyone else, there's a compelling survival experience that rewards the curious player...

WHY SHOULD I CARE?

+ You ain't scared of nothin'
+ Survival games are your jam (once you work out how to make jam)

It's not the kind of tale that bombards you with cutscenes (they are incredibly scarce and all in-engine) and you do need to pay attention to clues and items you discover to start piecing things together. And while Endnight has also added an interesting alternative ending to The Forest, I won't talk about any more story details for fear of spoilers.

Suffice to say, the dozens of hours it'll likely take you to explore the island, plumb the depths of the intricate cave system (unlocking the necessary kit to facilitate further plumbing), and discover the patient conclusion through *that* door, it'll all be worthwhile. I've done that full trek twice now, both times in co-op with between three to five players, and I loved it both times.

Really, the main issues I have are the lack of hotkeys for items, some unfortunately persistent bugs, plus the massive frame drops that happen when entering/exiting caves.

It's not enough to break the game, but it is enough to drag you out of the fantastic immersion that permeates throughout the rest of the game. Regardless, I've put 50 hours into The Forest across Early Access and final release states, and I still don't feel like I'm done with it. It's that good.

NATHAN LAWRENCE PC

OR TRY THIS:

7 DAYS TO DIE
THE FUN PIMPS 2013
- They're called The Fun Pimps!
- The game's actually not that funny

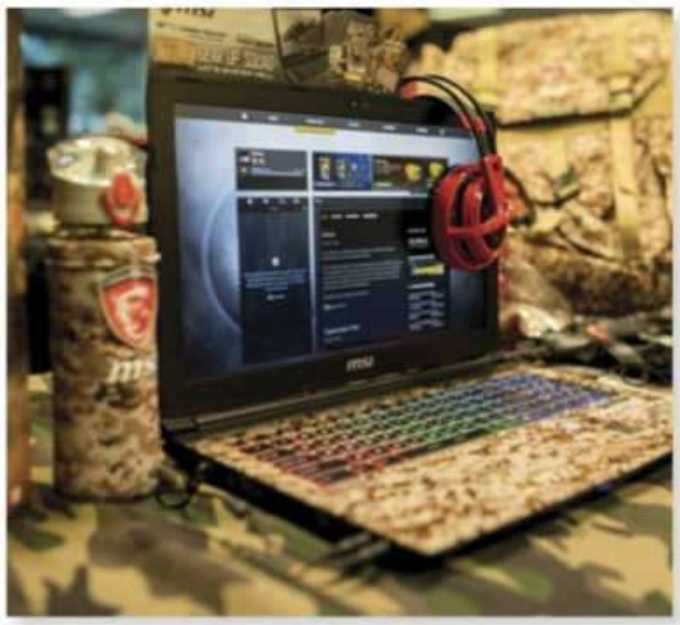
SUBNAUTICA
UNKNOWN WORLDS ENTERTAINMENT 2018
- Amazingly immersive
- You may shit yourself

NO MAN'S SKY
HELLO GAMES 2016
- Now the game it was meant to be
- No zombies

VERDICT:

The Forest frequently flirts with perfection. A fantastic and engrossing survival-horror experience from start to finish.

9



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Warhammer 40,000: Inquisitor – Martyr

FOR EMPER... or... Look, I really can't get excited about this anymore.

DEVELOPER NEOCOREGAMES • **PUBLISHER** NEOCOREGAMES • **PRICE** $US49.99 • **AVAILABLE AT** STEAM
neocoregames.com/en/games/warhammer-40k-inquisitor-martyr

I'm not the only one who's a little jaded by the rapid release date of games based on Games Workshop franchises. As the satirical games website Point and Clickbait notes, it feels like just about anyone can get into the action (track down its story about a pigeon becoming a GW developer – it's worth the read). So it's rare that a game like Warhammer 40,000: Inquisitor – Martyr comes along – that is, a game that I'm actually genuinely keen to play.

Martyr – no WAY am I saying the overblown full name every time – is essentially grim-dark take on the action RPG genre as typified by Diablo. But instead of a dungeon, you're exploring the bowels of a gigantic, abandoned space-hulk (at least to start with), whose gleaming bulkheads and rusted partitions gradually give way to gore-soaked corridors and the fleshy architecture of the corruption of Chaos. And instead of a stalwart adventurer, you play a stalwart Inquisitor of the Imperium – a loyal servant of the Emperor with enough clout and confidence to talk to back even to Space Marines.

You get to pick from three different classes, each with three different sub-classes. So, if you take the Assassin…

Well, okay, I'm a 40k nerd, and I have to say that Assassins and Inquisitors are TWO VERY DIFFERENT THINGS AND THIS REALLY ANNOYS ME and anyway…

And yes I know Asssassin's can become Inquisitors but then they stop being assassins and yes I am splitting hairs!

So if you take an Assassin, you can basically choose between a shooty sniper, and a sneaky stabber, and a shooty fast person who also has a sniper rifle. It's an odd mix of nomenclature and gear, but when combined with armour types with different abilities, there's actually a lot to differentiate each class and sub-class. You've got a range of abilities to use, spread between four powers for each of two weapon sets, and something like an ultimate that often has more devastating effects. With some classes, the weapon sets switch between, say, killing a lot of things close up, or killing a few less, but having more protection. Others have much more striking differences, such as the Sniper's longarm, which is great for killing at a distance (quelle surprise!), and her two auto-pistols, which are great for dealing with hordes.

With a few exceptions, however, all the classes still come down to the same thing – clicking your way about each level, and then button-mashing enemies to death. If you're a ranged character, like the Sniper, you can take cover to protect yourself, but all cover in the game can be destroyed, so you still need to be mobile. If melee is your thing, you're generally just charging in and giving your mouse a heart-attack, all the while throwing grenades, using special abilities, and generally generating a LOT of gibs.

The plot is... well, it's an excuse, really. You crash while investigating the Hulk, so have to deal with the whole mess on your own. There are numerous displays to activate to learn more about what happened to the ship, but it's hardly a spoiler to say

The fact that Imperial spaceships seem to be largely made of stone has always mystified me...

> "...it doesn't really get good until you hit level cap and start unlocking end-game content..."

WHY SHOULD I CARE?

+ You have unfailing faith that the Emperor protects
+ You're not sick of Warhammer games
+ The idea of spending 60 hours to get to the good stuff seems 'cool'

SEQUENCE

LET'S MAKE A SPACE-FASCIST!

1. I will be a mind-killing guy!

2. But which one?!

3. And do I want to fascist hard? Or easy?

Shoot and Retreat
Long Range
65 DMG 131 DPS Physical (Kinetic)
Salvo
Stun
Slow
Spread (Tight)
Single Target
Delivers automatic fire and keeps moving the character away from the target until you release the button
Ammo 1 Round(s)
Cooldown 0.5 sec
Salvo: Sustained automatic fire until you release the button
Stun: Disables the target for 3 seconds. Affects only against targets with red Suppression Resistance
Slow: Applies -40% movement speed to the targets for 5 seconds. Affects only against targets with yellow
Spread (Tight): 4° shot spread
Single Target: Each attack targets a single enemy
Feral Tribes
Free the prisoners (0/2)
1
2
3
4
5

that, essentially, it comes down "Chaos did it". The plot does open up later in the game, and sees your traveling far and wide, but the opening levels never really show the scope of the game to come, so you could be forgiven for thinking that that's all there is.

It's all fun enough, and the level design is really quite gorgeous – though at times also repulsive, in a ghoulishly entertaining way. Each class has unique abilities to unlock, and while none feel like they offer real power increases, there's also a lot of different gear slots to upgrade. However, this is where the game really fails – or works, depending on your outlook.

Classically, Diablo and other action RPGs are as much about loot as they are fighting - slowly changing up your gear and armour and trinkets as you progress not only through the game, but through any given level. In Martyr, however, you only get loot at the end of each level, so it feels kind of… miserly. I have been told there is gear in the game, but RNGesus must really hate me, because I wasn't finding any of it.

If you hate the constant fight, loot, gear-up, repeat process of Diablo, this might appeal, but when all you've got each level is just click-killing everything in sight, the game gets a little dull, and the terri-bad voice-acting doesn't do Martyr any favours either. Every time my Inquisitor stops to report back to her ship or get a dog up some uppity Marines, I flinch.

Which is, all up, a real shame, as there is the structure of a good game here. The issue is that it doesn't really get good until you hit level cap and start unlocking end-game content – which, I must say, I have not done, because that takes 60 hours and life really is too short. On the flipside if you're looking for that one game that you're going to dedicate your time to, ignoring all else, Martyr may be a good choice, assuming you have the patience for that initial slog.

Suffice to say, I did not.

DAVID HOLLINGWORTH PC

SPOTLIGHT

BE VEWY, VEWY QUIET... WE'RE HUNTING CULTISTS!

1. These are the mouse-over tips for ONE ability.

2. Occasionally you make friends!

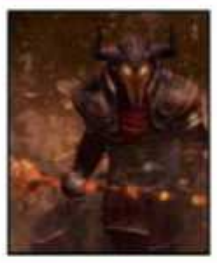
3. The levels really are wonderfully grimdark

4. Your main abilities, mapped to mouse and number keys

5. I really hope you like arches...

OR TRY THIS:

SPACE MARINE
RELIC 2011
- One of the best GW offerings
- Multiplayer was... iffy



PATH OF EXILE
GRINDING GEAR GAMES 2013
- The good content starts right away
- AND IT NEVER STOPS

TORCHLIGHT II
RUNIC GAMES 2012
- So much loot!
- Frankly nothing. I love this game.

VERDICT:

A gorgeous game in looks, but repetitive and miserly in its gameplay. And that voice acting - UGH!

6

I Hate Running Backwards

Light, breezy, fun... and punishing as all get out

DEVELOPER TERACTIVE, CROTEAM INCUBATOR • **PUBLISHER** DEVOLVER DIGITAL • **PRICE** $US14.99 • **AVAILABLE AT** STEAM
store.steampowered.com/app/575820/I_Hate_Running_Backwards

There's a lot in I Hate Running Backwards that we've all seen before. The top scrolling screen, the numerous bullet-hell style powerups, the 'roguelite' appellation that basically means "We can't be arsed designing the levels, so let's let the code do it", and even some of the characters – like Serious Sam and Lo Wang.

But you know what? It all hangs together very well, and there's a surprising amount of depth to the game's core mechanic, which sees you running backwards towards the top of the screen, as the level scrolls down, and enemies appear from below.

And holy heck do a lot of them appear. And there's all kinds. And the weapons are insane. And… my heart rate is going up just thinking about the level I got killed no before writing this review!

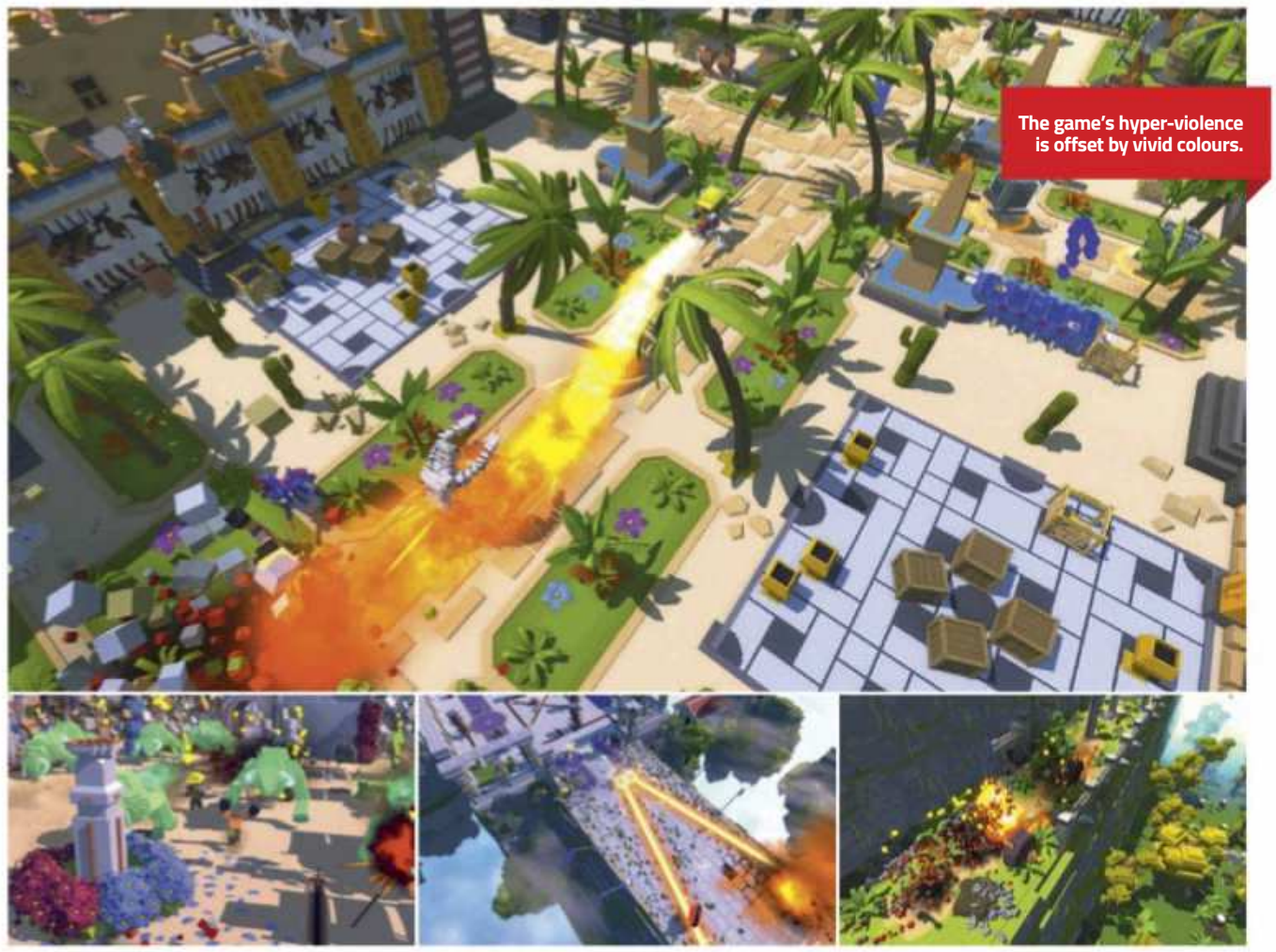
There's not much beyond that, really. You pick a character – three are available to start with, and more unlock as you progress – and then into the action. Each character has a couple of defining characteristics; Sam, for instance, has three health but is a bit slow, while Shadow Warriors' Lo Wang is less healthy but more mobile. Once you're playing a level, though, everything else is random. I played one level where it was ten seconds before a super tough mummy started crawling up the screen after me, and another where there was an instant horde of bomb-handed mutants crying for my scalp.

Level design is procedurally generated, but still manages some clever and challenging combinations to maneuver around. The more you back into the top of the screen, the hard it is to both push back down to give yourself some room to maneuver, or spot upcoming powerups and crates. This is where the game's depth becomes apparent – it's not just about shooting bad guys, but using the ever-scrolling terrain to channel them in ways that lets you conserve ammunition, or avoid enemies altogether – the bomb-handed mutants, for instance, run straight for you, but they also blow up on contact with terrain elements.

As each game progresses, so does its complexity, as you're dodging more badguys, while also juggling two weapons quite often – one triggered by each mouse button. Combined with a spinning melee attack with a short cool-down, timing each attack becomes more and more challenging, and mis-keys more and more punishing. Weapons range from your basic starting pistol – no, not that kind of pistol – and pickups offering everything from machine guns to rocket launchers, off-hand laser weapons and flame-throwers, mini-guns, and more.

The game is really quite brutal, but individual runs quite short. It's a perfect palate-cleaner game – quick to load, easy to switch to from other applications, and over pretty fast. Unless you're good at it, which, you know… I'm pretty much not.

But it's also just wonderfully silly fun. Bright, chaotic in the all the best ways, and always surprising.
DAVID HOLLINGWORTH PC



The game's hyper-violence is offset by vivid colours.

> "Oh, and occasionally a giant bull will invade the level and run across the screen sideways..."

WHY SHOULD I CARE?

+ Running forward is so last century
+ The only interaction you need is shooting
+ You want a game that can be played in minutes

OR TRY THIS:

ENTER THE GUNGEON
DODGE ROLL 2016
- Guns all the way down
- It wants to kill you

FLAME OVER
LAUGHING JACKAL 2015
- You can burn it all!
- The word "pyroguelike"

UTOPIA 9 – A VOLATILE VACATION
WHALEGUN 2016
- Twin-stick fun
- This vacation SUCKS

VERDICT:
I really do hate running backwards, but I also really like I Hate Running Backwards.

8

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Phantom Doctrine

A colder war.

DEVELOPER CREATIVEFORGE GAMES • **PUBLISHER** GOOD SHEPHERD ENTERTAINMENT • **PRICE** $TBC • **AVAILABLE AT** STEAM
goodshepherd.games/games/phantom-doctrine

I like to imagine the elevator pitch for Phantom Doctrine was pretty simple. "It's XCOM, but for spies!" and someone at Good Shepherd went "Heck yes!" But it's also a pitch which doesn't do the game any justice, because in a lot of ways it is far, far better.

Phantom Doctrine's core loop is almost identical to XCOM's – the game switches from managing the strategic picture of the Cold War during the 1980s, to the tactical stage of running operations across various global hotspots with your team of agents. But whereas XCOM is almost entirely about shooting aliens in the face, much of the missions in Phantom Doctrine revolve around a more deliberate approach, and ending a mission without a shot fired, or a single dead body, is often more important than lighting up those damn Russkies or Capitalist Pig Americans.

And yes, you can play either as a KGB agent, or a CIA agent, but… Well, I'll leave some developments for you to find out on your own.

There's all kinds of interesting twists to the base XCOM formula. When things do go loud, it's pretty classic stuff – you can move and shoot, move twice, hug cover, set agents to Overwatch, and so on. But on top of Action Points, there's a couple of other metrics to keep track of, which allow you to perform silent take-downs or perform lethal headshots. And while XCOM's rather dubious random hit chances are bit of a sore point for many fans of such games, Phantom Doctrine's does away with random values altogether – your agents are professionals, and will either do minimum or maximum damage with each shot, modified by dodges from aware opponents. This makes you feel that much more lethal on the ground; but, the badguys have the same ability.

Seriously, who brings a .50 cal longarm to a CQB fight? This guy.

> "Your agents are professionals, and will either do minimum or maximum damage with each shot."

WHY SHOULD I CARE?

+ You love XCOM
+ You miss the 80s
+ You have a deep desire reenact Atomic Blonde

Getting into a gunfight is very rarely a good idea, and doing so during the extraction phase of an operation – and you have call in your evac, making timing everything – is even worse, as your car, chopper, or whatever may well veer off if the landing zone is too hot.

Back at base, there are again similarities, as you can train up agents, allocate high-tech spy gear (and you research some real neat toys!), and expand base operations. But you can take control of much more, and the biggest innovation would have to be the Investigation Board. You know that great meme from It's Always Sunny in Philadelphia, with the red string and photographs and general air of crazy desperation? That's a whole mini-game in Phantom Doctrine, as you search out important key words, link up documents, uncover hidden plans, and finally unlock new clues to ongoing investigations.

Phantom Doctrine does have some flaws – line of sight can feel a little iffy at times (seriously, how could that guard have seen my damn sniper?!), for instance – but overall it comes across as the thinking gamer's XCOM.

DAVID HOLLINGWORTH PC

OR TRY THIS:

XCOM 2
FIRAXIS 2016
- A whole world to save
- What d o you mean I missed a 90% shot!

BATTLETECH
HAREBRAINED SCHEMES 2018
- GIANT ROBOTS!
- Less hats

BREACH & CLEAR
MIGHTY RABBIT 2014
- Pure tactical action
- Just a little bit 00-RAH

VERDICT:

Taut, thrilling, and full of twisty new takes on a classic gaming formula, Phantom Doctrine is our new strategic addiction.

9

Red Faction Guerrilla Re-Mars-tered

Blast from the past

DEVELOPER VOLITION • **PUBLISHER** THQ NORDIC • **PRICE** US$19.99 • **AVAILABLE AT** STEAM
xxxxxxxxx

Red Faction Guerrilla Re-Mars-tered hasn't lost much of its charm, and that's largely owing to its environmental destruction technology, Geomod 2, which really hasn't been replicated by many peers in the years since Guerrilla first arrived, not to mention the gameplay that was quite sensibly tied to it.

As a terrorist rebel militia, chief among the Red Faction's means of revolt is to blow shit up, and Guerrilla gives you ample outlets to do this.

Whether eliminating an enemy stronghold, destroying a moving convoy, rescuing captured rebels from behind fortifications, or the various demolition-specific missions that time-challenge you to take down certain structures, it remains a very satisfying and fun experience to level enemy buildings that crumble with a degree of authenticity.

Many of the objectives littered across the open-world style map will reward the player with new weapon unlocks and salvage, the game's weapon purchase and upgrade currency. It's a meaningful system that drives the game forward. New weapon unlocks like rocket launchers, proximity mines, and an increased satchel charge capacity are always offering bigger and better ways to get the most joy out of the Geomod technology, leading to increasingly spectacular destruction as you progress through the campaign.

As for what you're getting in terms of the remaster, texture resolutions have been given a nice increase, in addition to lighting, shadows, and shader effects also being upgraded. If you're coming in having not seen the original release in some time, these changes may not be so apparent at first, and while more subtle than maybe I originally anticipated, the remaster does give Guerrilla a fresh and vibrant sharpness.

"I'm-a just stand here and try not to flinch at all the physics heading my way."

> For many players it was enough in 2009, but these days your mileage will of course vary.

WHY SHOULD I CARE?

+ Destructible buildings sound like dumb, guilty fun

+ Upgraded graphics buff the experience without overkill

+ If you played the first one, this one is probably free

Aside from a few slight changes to vehicles and building styles, depending on which of the six locales of Mars you've progressed to, the variety only goes so far. For many players it was enough in 2009, but these days your mileage will of course vary.

Another potential issue is performance. During initial sittings my experience was severely diminished by intense frame stuttering and skipping, sometimes to the point of unplayability.

It's an issue reported across several forum posts in Steam's community, with many members chiming in to report similar issues. V-sync on, v-sync off, windowed fullscreen, windowed exclusive - I've given most of the suggestions a go, while stopping short of following through on some of the classic "go buy a better rig" advice.

Frame issues aside, Red Faction Guerrilla Re-Mars-tered gives old players a decent enough excuse to take it out for a guilty spin, and opens a door for new players to experience a blast from the past. And while its explosive charms may not have completely worn off, Guerrilla's relatively repetitive mission cycle will be harder to make stick in 2018.

MICHAEL JENKIN PC

OR TRY THIS:

RED FACTION ARMAGEDDON
VOLITION 2011
- More Red Faction!
- Too much Red Faction

JUST CAUSE 3
AVALANCHE STUDIOS 2015
- Cutting edge destruction
- Really can't think of any

GOAT SIMULATOR
COFFEE STAIN STUDIOS 2014
- Goat physics
- Slightly less gritty communist action

VERDICT:
Yeah, it all looks really good when it works, but that doesn't help the problems of the base game.

6

Tech 272

YOUR GUIDE TO PC GAMING HARDWARE

Wired for sound

Or... unwired. It's up to you

I listened to a lot of headphones for this issue. Ranging from cheap and cheerful (and surprising!) to ones packed with bells and whistles (and, of course, RGB lighting, which, frankly... UGH).

I don't know why - it's just been that kind of time. Everyone's releasing headphones, from stalwarts like Plantronics, for whom it is their core business, to MSI, who are making a bold entry into the peripherals market. There were more than were listed here, too - we just didn't have room!

And, with all those new, and very good headphones, I really thought I'd end up finding my new, go-to, home gaming pair of cans.

Nope.

As I mention later, my home PC has a pair of Plantronics Gamecom Commanders permanently on hand, and let me tell you that despite their age, it's still one of the best sounding set of headphones I've ever used. Which is ironic, given I thought they were a bit gimmicky at first, modelled as they are in hyper-tacticool style. But you know the best thing about them?

A massively long, coiled, cable. Sure, they're not wireless, but they don't need to be, because I can reach everything in my gaming space while still wearing them. Basically, if I can't reach the fridge for a top up while staying in chat... What even is the point?

David Hollingworth

Editor

Our Power Award is given to products that are best in class no matter your budget.

Our Smart Buy Award goes to products that balance performance with price tag.

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THE PCPP TESTBENCH

CPU
INTEL I7 7700K
intel.com.au

MOBO
ASUS Z270 ROG CROSSHAIR VI HERO
asus.com.au

RAM
2 X BALLISTIX 8GB DDR4-3200
crucial.com

PSU
CORSAIR 850W PSU
corsair.com

COOLING
H105 CORSAIR COOLER
www.corsair.com.au

AMD 2nd Gen Ryzen THREADRIPPER 2

THIRTY TWO CORES!

AMD is on a roll that started with the Zen-core Ryzen, and now we have what is potentially the most powerful consumer/prosumer CPU you can buy. While this isn't a CPU intended for gaming, strictly speaking, it can game within single digit percentage points of Intel's best when you look at single core performance, AND stream effortlessly at the same time. The number of people doing that is increasing by the day, and, for people that do run apps that can leverage this abundance of processing power, Threadripper 2 is true wonder of the computing world.

It's pleasing to see AMD's continued confidence in the Zen core, and with that, its drive to keep pushing. It's only been just over a year since Ryzen launched, though it feels like longer. AMD has just reported a 50% revenue growth so this aggressive engineering and marketing push is clearly working for the company and all this keeps us glued with interest at the continually invigorated CPU market, and of course, Intel's obligation to respond in kind

with better products at lower prices. As AMD's Jim Anderson, the SVP and GM for AMD's Computing and Graphics division told us "Threadripper 2 is the absolute top end for high performance and has raised the competitive energy in the industry". He's not wrong.

It's a cool to remember, too, that Threadripper was never originally part of the Zen roadmap, and was a passion project put together by AMD's engineers on the side that when presented to management, was so compelling that the company got behind it and made it a reality. Or so the story AMD likes to have us believe goes, anyway.

> Dollar for dollar, once again it sits well against Intel's i9 range, offering more potential performance for a lower cost.

WHAT YOU CAN HAVE

Architecturally, AMD has doubled the Threadripper's core count, without sacrificing frequencies, and it's still cheaper than the Intel i9 nearest equivalent. Fun fact: it's also the heaviest consumer CPU ever.

AMD has split TR2 into the 'entry level' X series, and those are the first chips off the block launching right now. In October we'll see the beefier WX series TR2s.

There are two SKUs in each series. The base-level 2920X is a 12 core/24 thread part running at 3.5GHz base and up to 4.3GHz boosted. It's $US649. Next up is the 2950X, with 16/32 cores also with a base clock of 3.5GHz and an ever so slightly faster 4.4GHz boost. That one's $US899.

October's WX series starts with the $US1,299 2970WX, with 24 cores and 48 threads, and at the top step is the $US1,999 2990WX with the record-breaking 32 threads / 64 cores, running at the same frequencies as the lower WX CPU.

All are built using a 12nm process. They're power hungry little monsters, which isn't in the least bit surprising or disappointing, at 180W for the X series and 250W for WX chips. The cores themselves are Zen+, which we first saw with Ryzen 2. Little has changed with the cores themselves. AMD talked of improved algorithms for better boost performance, but the bigger deal has been the tweaks (which Ryzen has also seen) which smooth out performance for those few odd apps that didn't play well with Zen when it first launched.

TR2 maintains the common Infinity Fabric architecture that underlies all AMD CPU and GPU design. That means no new motherboard is needed if you're running a TR4 board. That's a huge win and sticks it to Intel and its forced motherboard upgrades with every new generation over the last few years. On the flipside, it means AMD couldn't tweak Infinity Fabric to link all four channels of memory to the CPU, just two banks link directly, but in almost every usage scenario there's bandwidth to spare on the bus to keep all four channels well fed, AMD tell us, though testing will bear that out.

All three levels of CPU cache have also been sped up a bit, by around 15% on average.

THE BIG DEALS

TR2 comes out of the gates with several compelling aspects in its favor. First there's the motherboard commonality, so for existing TR1 owners all that's needed is a BIOS update. That's a sweet prospect for both home users and commercial operations already sold on the benefits of Threadripper's many core concept.

Dollar for dollar, once again it sits well against Intel's i9 range, offering more potential performance for a lower cost. As the bechmarks show, for those specialised apps that can eat up all this power it's a killer, and there's an ever-growing base of industries and professions that can indeed leverage such a high core count.

You still get up to 64 PCIe lanes so there's really no practical limitation on building an outrageously specced machine, one with, perhaps, four GPUs and a nasty array or RAIDed NVMe storage, and all the USB bandwidth you'll need too.

It's a practical CPU. TR4 will run perfectly well on air cooling, and with its launch comes a new Wraith HSF developed by Cooler Master.

SO WHO'S IT FOR?

Threadripper 2 is for enthusiasts that want something extreme. It's also a very capable gaming CPU, but that's not the primary market for this one. Mainly, this is a massively powerful data crunching machine for creators and innovators. Those that do 3D modelling, rendering, 4k video editing or large scale virtualisation.

It's for software developers, for those doing compute intensive tasks like raytracing, 3D VR animation and simulation, character modelling... and all that. In other words, a very large slice of the professional market.

And even while it's still fractionally still behind Intel for pure gaming frames - what TR2 DOES bring to that party is having cores to spare for streamers. Technically that's a very specific and legitimate use, as anyone knows that has seen a stream where frames drop off or the stream itself is jerky. This is not a small market easily dismissed, either, and let's not forget the halo effect of having your favourite streamer 'powered by Threadripper' and the flow on sales that will generate.

AMD has, of course, been working hard with game developers on two fronts -- to get them coding more efficiently for the Zen core, while also trying to move forward wider use of beyond-four-core utilisation. AMD really didn't want to reveal specifics about what's working best right now but did tell me that the Oxide and Frostbite engines were the ones to watch for leading the way here.

There remain rare games that don't play well with many cores, so as with Threadripper 1 there's a user enabled compatibility mode that runs TR2 as an eight-core machine.

Still, bringing true massive-core benefits to gaming is still a process that will take several years to fully eventuate, in part because there are many engines that are old and have a wide user base that doesn't want to or need to upgrade.

This is why single core performance and IPC (Instructions Per Cycle) is of current and predominant importance. While a four-core CPU is enough for almost any current game, you will increasingly be running close to the limit as game engines evolve upwards, alongside your own potentially changing needs over the next year or three that you'll likely run the same CPU.

TWEAKING THE BEAST

Importantly, TR2 runs with respectable base clocks so it's still a reliable gaming CPU workhorse, and the big win is not only for people that DO currently want extra cores above what they need for gaming NOW, but also those who will likely sit with this CPU for a couple of years or longer and don't know what the future holds, but want to be ready. You're getting extremely high end multi-thread performance in a scalable package.

AMD has improved its XFR 2 boost mode with better algorithms to reduce the sudden performance drop offs occasionally seen with TR1 and Ryzen when they throttled up or down with steep gradients, it now smoothes things out more. It also responds far better when ambient temperatures are on your side and really benefits from good cooling, with a boost gain of around 5% if ambient temps drop from 30c to 20c, for example.

Worth remembering too, is that Threadripper uses AMD's best binned cores, the top 5% AMD told me.

OVERCLOCKING

There's a new Precision Boost Overdrive (PBO) that allows more aggressive boosting via more granular frequency voltage and core management. It still voids warranty but you've got some confidence this wil be managed within sensible constraints because the overriding SenseMI manager stays in control. All this upgrade really does is expand the boost envelope (your individual results will vary based on core quality and ambient temps and workload impacts).

IN THE END

For a relatively reasonable cost AMD has once again expanded the CPU performance envelope. It is a technical triumph that shows the company isn't about to rest on its laurels in either the marketplace of its engineering labs.

For those who do invest in Threadripper 2 the economics of the performance add up well. For the rest of us it is still truly exciting to see the CPU scene thriving, testing Intel, and giving us hardware enthusiasts a fun and fascinating game to watch along with technical achievement to appreciate.

BEN MANSILL PC

▶ **While Australia is having conniptions over plastic bags and wasteful packing materials, AMD is... thinking different.**

PROCESSOR

Threadripper 2

Big, beefy, and… a little touchy.

PRICE $TBC
www.amd.com

Yep, Threadripper 2 CPUs are beasts! Obviously we know from their apt names that they will perform very strongly with multi-threaded workloads. With that in mind, benchmarking Threadripper 2 proved to be a challenging undertaking for several reasons.

As we discovered when testing both the 2990WX and 2950X, and let's not forget Intel's i9-7980XE, many of our consumer focused benchmarks that make use of multi-threading simply don't scale up to the insane core counts we're seeing here. The key takeaway is that you MUST have a use-case for a CPU like the 2990WX. Things like rendering, encoding and hashing algorithms perform magnificently when supported, but if you can't use all the cores, then the lower-priced models like the 2950X make a lot more sense.

It's no surprise that the 2990WX absolutely dominates the heavily threaded benchmarks. Cinebench and Blender are laughed off, but unfortunately many consumer level video encoders just aren't coded to support 64 concurrent threads. We tested a new benchmark called Cinegy Cinescore. It too failed to scale over 16c/32t. The 2950X with its lower core count is better supported by a lot of software and its superior clock speeds see it come out ahead in a few circumstances.

We looked at gaming too. We disabled ¾ of the cores on the 2990WX while leaving the 2950X at default and saw a bit of a mixed bag. Ghost Recon Wildlands and Warhammer II don't have any problem with 8 and 16 cores, but Tomb Raider and Far Cry 5 really struggle with high core counts. To get the best gaming performance out of Threadripper, you should enable Legacy Compatibility mode in the Ryzen Master software, which disables cores. While ultimate gaming performance still favours Intel, remember, the gap is basically nothing at high resolution and settings. Still, it's fantastic that AMD offers a one click feature to extract maximum performance in games, leaving all those cores to be used only when they are needed.

> "It's no surprise that the 2990WX absolutely dominates the heavily threaded benchmarks."

Game mode drops the number of cores in action while you play.

THREADRIPPER 2 BENCHMARKS

Indictaes Best Result

	Cinegy Cinescore Video Encoding	Cinebench 15	Cinebench 15	Blender 2.79 BMW Render	7Zip	PCMark 10
	AVC Ultra 400 2160p, FPS	Multi thread Score	Single thread Score	Time (seconds) Lower is better	Million Instruction per second	Score
Intel Core i7-8700K	53	1411	194	310.76	5804	5512
Intel Core i9-7980XE	100	3316	178	144.27	84998	4959
AMD Ryzen 7 2700X	64	1782	177	267.96	46521	5769
AMD Ryzen Threadripper 1950X	107	2957	166	159.05	77468	5722
AMD Ryzen Threadripper 2990WX	103	5040	164	95.06	93924	5206
AMD Ryzen Threadripper 2950X	114	3010	167	154.57	81250	6155

	3DMark Firestrike	Rise of the Tomb Raider	Ghost Recon: Wildlands	Total War: Warhammer II	FarCry 5
	Score	1080p, Low, DX12, Avg FPS	1080p, Low, Avg FPS	1080p, Low, DX11 Avg FPS	1080p, Low, DX11, Avg FPS
Intel Core i7-8700K	22643 (18949 Physics)	228.29	180.49	225.6	152
Intel Core i9-7980XE	24060 (26136 Physics)	163.81	177.35	227.2	133
AMD Ryzen 7 2700X	20737 (20486 Physics)	200.88	167.03	219.7	133
AMD Ryzen Threadripper 1950X	22473 (26699 Physics)	162.59	160.19	226.2	107
AMD Ryzen Threadripper 2990WX	20911 (21750 Physics)	194.51	168.39	223.5	132
AMD Ryzen Threadripper 2950X	23370 (28189 Physics)	164.88	163.22	227.2	115

AMD TR2 TEST SETUP

Motherboard: Asus ROG Zentih Extreme ▪ **Graphics:** Nvidia GTX 1080 Ti Founders Edition ▪ **RAM:** 4x8GB G.Skill Flare DDR4-3200 14-14-14 ▪ **Power Supply:** Antec HCP-1200W ▪ **Storage:** 1Tb Samsung 960 EVO & WD Black M.2 SSD ▪ **Cooling:** Enermax Liquitech 240 AIO ▪ **Operating system:** Windows 10 Pro 64-bit

We expected TR2 to get pretty toasty, but we were amazed at just how cool both processors run. At idle our tested cooler was silent, with Ryzen Master reporting temperatures in the low 30s. It's the load temperatures that really surprised though. With the cooling set at auto, the 2990WX never even hit 60c with 100% load. The 2950X was even better, in the mid 50s. It's obvious that the very large CPU package, with its individual dies and large heatsink contact area, make a huge difference. Awesome.

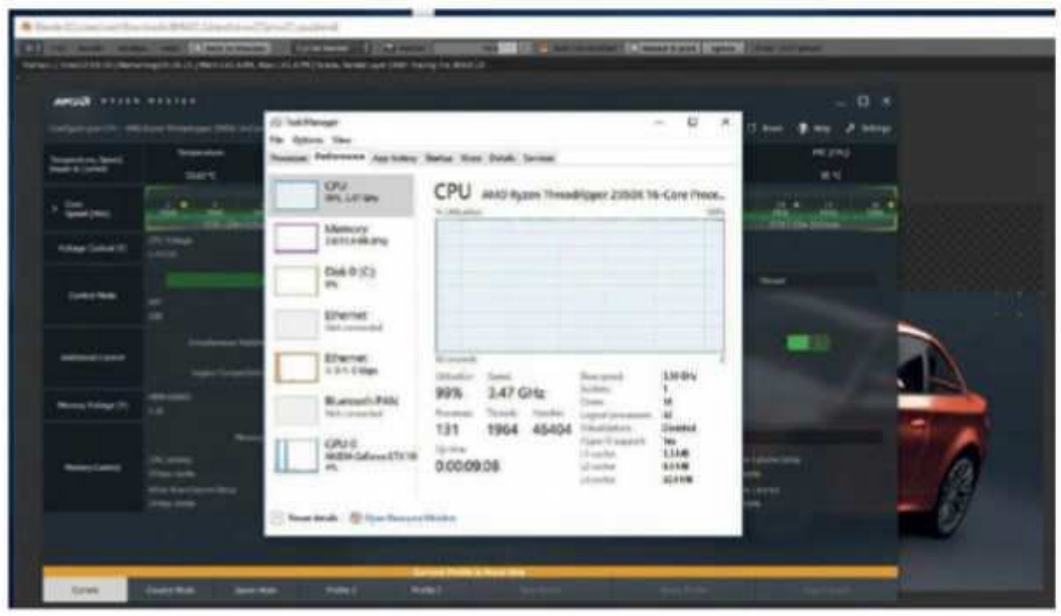
AMD has updated its Ryzen Master application with full support for the Threadripper 2 series. Things like clocks speeds, voltages, and DRAM settings are all adjustable. One of the really cool features is the fastest core detection - it identifies the strongest cores you could then use for apps that require the highest clock speeds. We also mentioned the legacy compatibility mode, which we used for our 2990WX game testing. According to AMD it can boost game performance by 5 to 10% in most games. Ryzen Master is a particularly useful app with lots of information and settings available to tweak to your hearts delight.

There are two ways to summarise Threadripper 2.

For a professional user that can make use of its power, the 2990WX is far and away the best consumer CPU on the market and it offers terrific relative value too. The 2950X is a better option if you need the grunt and game too, though there are the cheaper and better performing options to found on the mainstream platforms if gaming is your focus. You'll know which kind of user you are.

Threadripper 2 ups the ante yet again, bringing unprecedented computing power to the consumer desktop. The 2990WX is the fastest CPU available outside of the enterprise realm, provided you have the workloads to make use of it.

For most mortals, the 2950X is a better buy. *CHRIS SZEWCYK* PC



◀Load temps show these new chips are very cool customers indeed.

+ • An absolute beast of a CPU
• Great software support

- • You really need a use for all those threads

VERDICT:

Possibly too many threads for all but the most demanding of use-cases, but a great piece of silicon nonetheless.

8

	x264 FHD Video Encoding	Cinebench 15	Cinebench 15	7Zip	PCMark 10
	FPS	Multi thread Score	Single thread Score	Million Instruction p/sec	Score
Intel Core i7-8086K	46.22	1417	204	40436	6275
Intel Core i7-8086K (5GHz All Cores)	53.28	1623	217	45510	6512
Intel Core i7-7700K	32.79	971	194	27891	6079
Intel Core i7-8700K	46.36	1414	200	40439	6299
AMD Ryzen 2 2600X	44.93	1384	173	36780	5938
AMD Ryzen 2 2700X	54.53	1848	179	46175	5993

	3DMark Firestrike	Rise of the Tomb Raider	Ghost Recon: Wildlands	Total War: Warhammer II
	Score	1080p, Low, DX12, Avg FPS	1080p, Low, Avg FPS	1080p Low, DX11 Avg FPS
Intel Core i7-8086K	23021 (18968 Physics)	222.2	186.17	219.2
Intel Core i7-8086K (5GHz All Cores)	24188 (21920 Physics)	246.38	189.22	226.0
Intel Core i7-7700K	21090 (14178 Physics)	212.37	176.83	199.5
Intel Core i7-8700K	23016 (19436 Physics)	218.64	180.49	207.0
AMD Ryzen 2 2700X	21146 (21221 Physics)	200.88	165.31	196.3
AMD Ryzen 2 2600X	20370 (18272 Physics)	193.48	162.11	190.2

PROCESSOR

Intel Core I7-8086K

Celebrating 40 years of Intel X86

PRICE $629
www.intel.com.au

To celebrate 40 years since the release of the 8086 CPU, Intel has released the aptly named Core i7-8086K. Interestingly, the 8086K, with its 5GHZ maximum turbo boost, is exactly 1000x the frequency of the original 8086, which came with a 5MHZ clock speed.

The 8086K is a limited edition six core/twelve thread CPU based on the Coffee Lake architecture and can be considered a higher-binned version of the already excellent i7-8700k. It comes with a higher base clock and a more aggressive turbo frequency. Where the 8700K comes with a 3.7GHZ base and 4.7GHZ maximum single thread turbo frequency, the 8086K bumps up the clocks to 4.0GHZ base and 5.0GHZ turbo. This makes the 8086K the first Intel CPU that can reach 5GHZ under stock operating conditions.

Everything else is shared with the 8700K. It's manufactured on Intel's 14nm++ node and is rated with a 95W TDP. There's 12MB of L3 cache and support for up to 64GB of dual-channel memory at DDR4-2666, though of course you can run faster memory than this when paired with a Z370 chipset motherboard. Intel's integrated UHD Graphics 630 engine is also present.

While the 8086K is a very fast CPU, we feel it could have been so much more. For example, soldering the heatspreader to the die, as opposed to the thermal paste that is used would have tremendously helped the overclocking potential of the chip and kept temperatures lower. Also, Coffee Lake scales quite well with little or no voltage increase up to the 4.5GHZ range. Could you imagine a 4.5GHZ base clock CPU with, say, a 125w TDP that can easily OC to 5.1-5.2GHZ+ with temps in the 60s and 70s?

The 8086K's higher single-threaded turbo boost ability means it takes the top spots in all of our single or lightly threaded benchmarks, however. There's is basically no difference in multi-threaded workloads though, as the higher core count turbo boost frequencies remain the same between the 8700K and the 8086K. If you're into gaming though, and especially using a very high refresh rate monitor, then the higher minimum and average FPS capabilities on offer will very much impress. We also see that the 8086K cannot hold its 5GHZ boost clock for all but the briefest periods; when we set to a flat 5GHZ OC, the results are significantly faster. The CPU does need to fit into its tight power budget at stock settings though, so this isn't much of a surprise.

The use of the highest Coffee Lake bins means the average overclocking ability of the 8086K should be better than the 8700K. While our 8700K required a fairly hefty voltage bump to get to 5GHZ stable with all cores, our 8086K did it with ease with 1.275v, definitely less than many 8700K's require. Load temperatures are pretty toasty though.

> "This makes the 8086K the first Intel CPU that can reach 5GHZ under stock operating conditions."

The 8086K is the best gaming CPU on the market. But, it does come with a relatively hefty price premium over the 8700K, so if you have one of those, there is no reason to upgrade unless you absolutely must have the best.
CHRIS SZEWCZYK PC

+
- The best gaming CPU there is
- Very good overclocking headroom

-
- Not that much gain over the 8700K
- Runs hot

VERDICT:
The Core i7-8086k is an excellent CPU, but we feel Intel could have done a bit more to make it truly special.

8

REDLINING YOUR BUDGET

‘Budget’ is no longer a dirty word in PC hardware, and AMD’s new boards show exactly why.

In years past, budget chipsets have tended to be associated with OEM systems, office machines or generally cheap systems. That’s all been changing in recent years, particularly in the case of AMD with its consumer-friendly, unlocked ecosystem. B450 is now pretty much X470 lite. You can overclock, run your memory at whatever speed the system is capable of, and all you give up is a bit of connectivity, SLI, and a few PCIe lanes. So if you’re running a typical gaming system, with a single GPU, an NVMe SSD and a SATA hard drive or two, there’s really very little between X470 and B450. Except the price!

B450 motherboards support all AM4 Ryzen processors. This includes first and second generation Ryzen, and Ryzen APUs with Vega graphics. B450 isn’t anything revolutionary, but it does add support for a few key AMD technologies, including the improved XFR and Precision Boost 2 automatic OC functions.

The other interesting tech is StoreMI, which is a way to combine all of your storage into a single virtual volume. The algorithm automatically assigns your frequently used files to the fastest storage available, so if you’re using a hard drive to store games, this is a cool way to dynamically allocate frequently accessed files over to an SSD as opposed to filling up the SSD with mega-sized AAA titles.

We’ve tried to go with budget friendly options where possible, avoiding the highest end models from the respective manufacturers’ B450 ranges. Our featured roundup includes boards from ASRock, Asus, Gigabyte and MSI, and this was an especially difficult roundup to judge. All the boards tested are quality products, and feel very much refined over first-generation Ryzen motherboards.

Read on as we take a look at models that will likely end up being among the highest selling AMD motherboards on the market. If you’re on a budget and thinking of going Ryzen, these are all boards you will want to consider. With the value on offer, you’ll be able to divert your hard earned dollars to a better CPU or GPU. After all, they are the things that will really make your system fly!

> The other interesting tech is StoreMI, which is a way to combine all of your storage into a single virtual volume.

B450 BENCHMARKS

Indictaes Best Result

	x264 FHD Video Encoding	Cinebench 15	Cinebench 15	7Zip	PCMark 10
	FPS	Multi thread Score	Single thread Score	Million Instruction per second	Score
Asus TUF B450M Gaming	43.98	1359	173	36605	5804
Gigabyte B450 Aorus Pro WiFi	43.84	1357	174	36606	5791
ASRock B450M Pro 4	44.13	1373	174	36780	5766
MSI B450 Tomahawk	43.71	1359	173	36277	5771

	3DMark Firestrike	Rise of the Tomb Raider	Ghost Recon: Wildlands	Total War: Warhammer II	FarCry 5
	Score	1080p, Low, DX12, Avg FPS	1080p, Low, Avg FPS	1080p, Low, DX11 Avg FPS	1080p, Low, DX11, Avg FPS
Asus TUF B450M Gaming	15570 (18261 Physics)	167.83	130.42	149.1	117
Gigabyte B450 Aorus Pro WiFi	15812 (18297 Physics)	168.63	129.34	149.0	117
ASRock B450M Pro 4	15737 (18327 Physics)	167.58	130.31	150.2	119
MSI B450 Tomahawk	15843 (18308 Physics)	169.50	130.70	149.5	118

CPU: Ryzen 5 2600X ▪ **Graphics:** Gigabyte Nvidia GeForce GTX 1070 ▪ **RAM:** 2x8GB G.Skill Flare DDR4-3000 14-14-14▪ **Power Supply:** Antec HCP-1200W ▪ **Storage:** 1Tb Samsung 960 EVO M.2 SSD
Cooling: AMD Wraith Prism ▪ **Operating System:** Windows 10 Pro 64-bit

MOTHERBOARD

Asus TUF B450M-Plus Gaming

Asus can do value too.

PRICE $179
www.asus.com.au

We often look at higher-end Asus boards such as the ROG and Strix ranges. There's something else that's interesting from Asus though: the TUF series. The so called TUF Gaming Alliance is a collaborative effort between many component manufacturers that aims to provide improved compatibility, reliability, and aesthetics. The TUF B450M-Plus Gaming we're reviewing certainly looks the goods, but of course the competition is red hot in this price range. Is it tuf enough to compete?

The TUF B450M is a micro-ATX board, which is okay for most users who don't even use more than a single slot anyway. It comes in at $179. Though we wouldn't call it a powerhouse of a motherboard, it's got a couple of key features that will appeal to some users.

As mentioned, the main focus is on reliability. If you're looking for a B450 motherboard to last through several upgrades (AM4 is set to go for a while yet) then the TUF series is likely right up your alley. Its VRM is on the weak side, plus there's only a single rather anaemic heatsink, so we'd steer clear of overclocking eight-core CPUs here. There's a single M.2 port that supports PCIe 3.0 x 4 and SATA modes and there's a subtle little RGB TUF logo at the bottom right. Overall it's a nice looking board, but it can't match the feature set of the other boards in the roundup.

The I/O area contains about the minimum required complement of ports. There's a pair of USB 2.0, a single 3.1 Gen 2, and three 3.1 Gen 1 ports, one of which is Type-C. Then we have a Realtek RTL8111H controlled LAN port and analogue audio ports controlled by a bargain-basement Realtek ALC 887 codec - this is the lowest spec controller of the roundup. There's a DVI-D port and finally, a HDMI port supporting version 2.0b. We consider this to be a real value-add given the strong multimedia capabilities on offer with a Ryzen 2200G or 2400G APU. It brings 4K 60Hz support which is essential for integration into a living room PC these days.

Performance wise, the TUF B450M performed right where we expected it to, though that's true of all the boards in the test. AM4 is now a well and truly mature platform and it's got years of life yet. Whether you use an APU or pop in a graphics card, the little Asus will do its job with no fuss.

This board is something a little different. We like its focus on reliability and component choice, likely making it a relatively safer bet for a long life span. The inclusion of HDMI 2.0 and its mATX form factor make this one a very good choice to form the heart of a multimedia home theatre or living room PC. It mightn't be as feature packed as some of the other boards in this test, but it offers good value and satisfies the needs of a rather specialized sub market.

CHRIS SZEWCZYK PC

"The TUF B450M is a mATX board, which is okay for most users who don't even use more than a single slot anyway."

+
- Solid design
- Good price
- HDMI 2.0 inclusion

-
- A bit feature light

VERDICT:

A focus on reliability, its mATX form factor and the presence of HDMI 2.0 makes this one a good choice for pairing with a Ryzen APU.

8

MOTHERBOARD

ASRock B450M Pro4

Value personified.

PRICE $145
www.asrock.com

If you're looking to buy a motherboard that offers great bang for buck, ASRock is usually right at the top of the list. We often wonder how ASRock manages to churn out motherboards that undercut the competition by such large amounts. Perhaps it's because it doesn't spend mega millions on marketing? Whatever the reason, offering value is what ASRock does best, especially in the lower end of the market where a board like the B450M Pro4 is primed to compete well.

If you looked at the B450M Pro4, you're unlikely to believe it costs around 145 bucks. It doesn't have the bling of high end boards but at the same time, it compromises very little on features when compared to boards costing much more. Of course it's a mATX board, but that doesn't mean anything if you're using it to host a typical single GPU system. It's not totally devoid of bling either, as there is an RGB header onboard.

ASRock has included a single 8-pin CPU power connector that drives a nine phase VRM that is easily capable of powering the likes of the eight core 2700X. We frown upon push-pin heatsinks but at least they are made of metal and have enough surface area to cope with the demands of a little bit of overclocking. There's four SATA ports and dual M.2 ports. The top most one supports NVMe drives with a PCIe 3.0 x4 connection, while the other supports a SATA based M.2 drive.

The rear I/O is the first thing that caught our attention when taking the Pro4 out of its box. It's got a set of ports that put some more expensive boards to shame. There's a total of eight USB ports consisting of a pair of 3.1 Gen 2 ports, one of which is a Type-C, plus four Gen 1 ports and finally a pair of 2.0 ports. There are headers for an additional four USB 2.0 and two 3.1 Gen 1 ports. Not bad at all! LAN duties are taken care of by a Realtek 8111H controller. The audio controller is also Realtek, specifically the ALC892 codec. There's a HDMI 1.4 port present; though we'd love to see a HDMI 2.0 port to get the best out of a Ryzen APU, but we can't have everything at this price. Finally there's a DVI-D port, PS/2 port, the three analogue audio ports and a VGA port, which hardly seems relevant in 2018.

Performance wise, the little ASRock did well. It fared particularly well in our multithreaded benchmarks, where it frequently came out on top, though the differences are small, as we expect all boards to be quite close to each other on a now mature platform.

> "It fared particularly well in our multithreaded benchmarks, where it frequently came out on top..."

Once again ASRock continues to enhance its already strong reputation for offering terrific value whilst not trimming down on essential features. If you're on a tight budget, the ASRock B450M Pro 4 is a great choice. It allows you to divert extra dollars towards a higher end CPU or GPU, which is where the real performance differentiation is noticeable. *CHRIS SZEWCZYK*

PC PowerPlay SMART BUY

\+
- Connectivity options
- Amazing value
- Strong multithreaded performance

\-
- Nothing significant at this price

VERDICT:

ASRock has given this little board a stunning price that belies its comprehensive feature set.

9

MOTHERBOARD

Gigabyte B450 Aorus Pro Wifi

An X470 level board without the X470 price.

PRICE $229
www.gigabyte.com.au

It's kind of difficult to think of a $229 motherboard as expensive, but, relatively, the B450 Aorus Pro WiFi is exactly that. It is by far the most expensive board in the roundup. We were chasing one of the lower-priced Gigabyte boards, but time constraints made this impossible. Normally a 20% or more price premium would count against many boards, but this is one that is brimming with features and has specs that truly illustrate what a 'budget' chipset-equipped motherboard is capable of.

If looks justified pricing, then the Aorus Pro should be $300+. It's the only board in the roundup to feature M.2 drive heatsinks. We usually like to see an M.2 slot above the first PCIe slot, but the beefy heatsink means your M.2 drive should stay at peak performance without throttling. There's a capable VRM system that will handle overclocking even eight core Ryzen processors. We'd like to see screw down heatsinks though; push pins should not be seen on all but the cheapest boards in 2018. Of course it wouldn't be Aorus without a healthy dose of RGB lighting. It really does look lovely.

Being the most expensive board in the test, the Aorus Pro WIFI needs to have a feature set to justify its relatively high price, and it does. And then some. While the other boards by necessity have lower spec controllers onboard, the Aorus Pro crams in everything a high-end board should have. There's ALC 1220 audio with an extra dose of WIMA and Chemicon capacitors, it's got Intel LAN and course 802.11ac WiFi is a strong value add. We also have that important HDMI 2.0 support for optimal Ryzen APU performance. Even the integrated I/O shield has a RGB logo. It's primo alright.

The I/O area has a good helping of ports starting with the AC Wi-Fi antenna ports. The USB complement is about the minimum we'd like, with two USB 3.1 Gen 2 (Type-A and Type-C), plus there's four 3.1 Gen 1 ports. There's the aforementioned HDMI 2.0 port, DVI-D, the Intel LAN port and a set of analogue ports joining a welcome S/PDIF optical port. A couple more USB would be nice but this is a set of ports we're happy with.

As with all the boards in our roundup, the Aorus Pro performed exactly as we expect. Any significant differences that existed between boards have been addressed through ongoing BIOS updates and electrical improvements over first generation Ryzen boards. This is the kind of board you'd be looking to slap a good quality GPU into, and get essentially identical performance to an X470 motherboard costing $100 more.

> "...has specs that truly illustrate what a 'budget' chipset-equipped motherboard is capable of."

Though it's the most expensive board in our roundup, the Aorus Pro justifies it. It will extract the most from your shiny new Ryzen processor and look good doing it, while ticking all the key feature boxes. If you're baulking at the price of typical X470 motherboard, then the list price of just $229 makes this one a highly compelling option.
CHRIS SZEWCZYK PC

+
- Chock full of specs and features
- Lovely looks and build quality
- Essentially X470 Lite

-
- Significantly pricier than other boards in the test

VERDICT:

The Aorus Pro WIFI shows that a budget chipset doesn't mean low end features. This one can easily form the basis of a top quality system

9

MOTHERBOARD

MSI B450 Tomahawk

A polished budget weapon.

PRICE $189
www.msi.com.au

MSI continue to relentlessly attack the gaming market, offering feature sets and specifications designed to appeal to gamers above all. The B450 Tomahawk is one of MSI's most important mid-range AMD boards and it promises to be a solid and reliable gaming board without the big price tag. The competition is tough though, so how does it stack up?

If you take a glance at the B450 Tomahawk, you wouldn't believe this is a sub-$200 board. It looks really classy with its industrial design, and there's also a splash of RGB lighting at the edge near the memory slots. There's only a single M.2 slot, though we like the positioning of it above the primary PCIe slot, where it is less prone to getting blasted with hot GPU air. The VRM isn't exactly extreme, but there's still some headroom for a bit of overclocking. We wouldn't want to push an eight-core processor hard on air cooling though.

While it definitely looks the goods, we would have liked to see the specification and feature list looking a bit better for its price point. The little ASRock is a tough act to follow in this regard. It does have a unique BIOS flashback capability, which will come into its own with future AM4 processors. Its purpose is to allow BIOS flashing without any CPU, memory or GPU plugged in.

The I/O area is adequate, but not remarkable. We have two USB 3.1 Gen 2 ports (Type-A and Type-C), two 3.1 Gen 1 ports and a pair of 2.0 ports. We've also got a CMOS clear button, a DVI-D port and a HDMI port. We're a bit disappointed that this supports just HDMI 1.4 though, HDMI is really needed to get the best out of Ryzen 2000 series APUs. Finally there's a Realtek Gigabit LAN port and a welcome set of six analogue ports, which are controlled by a Realtek ALC892 codec.

It seems clear that MSI has tried to keep the costs down by skipping the more expensive ALC1220 audio and Intel LAN, along with the missing HDMI 2.0. MSI does offer these kinds of options on its more expensive boards. At $189, the B450 Tomahawk is still good value, but it's hard to ignore the overall spec in the face of stiff competition.

The benchmark results are right in line with the other boards, as expected. We also continue to be impressed with MSI's BIOS, which remains arguably the best in the business.

MSI have produced a lovely looking motherboard that does exactly what it is expected of it. It's particularly refined and will serve well at the core of a powerful Ryzen-based gaming system. Our concern remains that there's just a little too much compromise with the component choices at this price to give it an unequivocal recommendation. Like all the boards in this really tough roundup though, it has its own strengths and if you end up going with the B450 Tomahawk, it will not disappoint.
CHRIS SZEWCZYK PC

> "... we would have liked to see the specification and feature list looking a bit better for its price point."

- Great looks
- Refined, comprehensive BIOS
- Solid build quality

−

- Compromises on some key components

VERDICT:

MSI's B450 Tomahawk is polished and refined, but it just misses a couple of important ticks to come out on top in the face of stiff competition

8

MONITOR

MSI Optix MPG27CQ

Gimmicks aside, this is a great, all-round, curved gaming monitor

PRICE $699
www.msi.com

MSI's latest charge into the gaming monitor space comes with a determination to become the number one, curved, gaming monitor supplier *in the world* by the end of the year. But our first impressions of this 27in standard bearer were mixed.

A headline feature of the Optix MPG27CQ is compatibility with Steelseries' Gamesense lighting system.

On the MPG27CQ, five separate banks of LEDs sit beneath the screen and can be programmed to act differently depending on which application or game you're in. Support was scarce at the time of writing, however, with only CS:GO, DOTA 2, and, er, Minecraft compatible with the system. In CS:GO the default lights represent colour-changing health bars, ammo bars, and a kill counter. While they work well and are easy to configure, even when forcing ourselves to… we didn't find them useful. In more complex games like DOTA, the greater number of functions makes the lights somewhat more useful (potentially).

There's even a large bank of LEDs on the back of the screen which can show other people key stats like how much health you have left. This may be useful at LANs, but it's super niche.

Other applications are also supported: Discord is compatible and can flash when someone connects, when particular-people speak, and when you're muted. Other supported applications are generally decorative and revolve around audio-influenced pulsing but more support is needed to make Gamesense lighting a killer feature.

At 27in the 180R curve is subtle to the point where you almost forget it's there.

We didn't notice light-bleeding around the edges of the curves but this is partly because the super-thin bezel at the top and sides of the monitor is buffered by a centimetre of dead, black, screen. This means that there is a relatively-thick bezel should you want to tile multiple monitors.

The VA gets bright (it's rated to 400 nits), is uniformly-lit, and has good viewing angles (rated at 178°). However, colour reproduction and contrast vary considerably according to settings used.

On rivals, adjusting settings can be laborious thanks to delayed changes and awkward, unintuitive interfaces. While MSI offers a single, rear joystick we almost-exclusively used the GamingOSD Desktop app, which facilitates almost-instant mode changes plus simple-to-use adjustments. If you don't like a pre-set – FPS mode destroys the colour green, for instance – then it's very easy to create your own.

> "…five separate banks of LEDs sit beneath the screen and can be programmed to act differently…"

More importantly, the 144Hz refresh rate means that games ran as super smooth as we'd hoped in everything we played. We didn't experience screen-tearing, but the Optix does support Freesync.

At $699 it's pricey compared with some other, excellent, 27in, flat-screen equivalents, but much cheaper than curved rivals. As such, if you want a curved gaming monitor this is one of the best you can buy, even with the flashy light things. *NICK ROSS* PC

PC PowerPlay POWER AWARD

+
- Excellent screen
- Amazing desktop settings app
- Good for work and play

-
- Gamesense lighting seems a serious gimmick
- No rotation

VERDICT:

Cheaper than many curved options, and packed with mostly really useful features, this is a great effort from MSI

9

	3DMark Firestrike	Rise of the Tomb Raider	Ghost Recon: Wildlands	Total War: Warhammer II
	Score	1920x1080, Very High DX12, Avg FPS	1920x1080, Very High DX11, Avg FPS	1920x1080, High DX11, Avg FPS
Asus GL503 Scar (GTX 1070)	12685	222.2	109.68	78.6
Metabox Alpha N950 TP (GTX 1060 6Gb)	10364	246.38	69.29	59.10
Asus G703 (GTX 1080)	18246	212.37	138.75	97.70
Alienware 15 R4 (GTX 1080 Max-Q)	16210	218.64	121.72	92.10

LAPTOP

Alienware 15 R4

If aliens built laptops…

PRICE $5181
www.dell.com.au

Alienware has been making gaming products since before the turn of the century, well before its acquisition by Dell. In years past Alienware was something of a boutique manufacturer, but with access to Dell's market reach and economies of scale, Alienware products challenge as some of the most desirable gaming products available, like the 2018 Alienware R4 we are reviewing here. It has a spec to match all but the very highest end laptops on the market.

The Alienware R4 can be highly customised, with a variety of CPUs and Nvidia GPUs to choose from. The spec we have on hand is one of the top configurations available, with a price to match. Let's start with an overclockable Intel i9-8950HK and Max-Q 8GB GTX 1080. Add in in 32GB of DDR4 memory, a 512GB NVMe SSD and 1TB 7200RPM HDD. If that's not enough then how does a 4K G-Sync enabled 15.6In IPS screen sound? These are specs that wouldn't be out of place on a high end gaming desktop, let alone a laptop.

It's a touch on the chunky side but it's one of the nicest looking laptops we've ever seen, with its partially matte black finish and metallic aluminium lid. It doesn't feel at all plasticky, like some laptops tend to do. There's also a healthy dose of fully customisable RGB lighting, with the logos, outer chassis, keyboard, and even the touchpad able to be independently controlled.

The 4K screen looks superb. Even when the display is scaled up to 250% the sharpness is amazing. The IPS panel means you get lovely deep blacks, great contrast and colour accuracy that makes games look incredible. It's great to have a beefy GTX 1080 that can actually drive games at 4K too. It's a real stunner.

The keyboard is a chiclet style number. There's a good amount of resistance and the key feedback feels quite responsive. The RGB track pad features a nice level of resistance and the buttons are basically silent, which is something of a personal positive.

The Alienware 15 R4 is capable of some impressive gaming performance, but do note that the use of a Max-Q GTX 1080 means there is a performance hit vs. the non Max-Q version. Still 60FPS+ at maximum settings is perfectly doable at 1080p. Running at 4K is a tough ask but it is possible.

The Alienware 15 can do a lot more than game. With this beast of a CPU, NVMe SSD and 32GB of RAM; rendering, video conversions, file compression and disk transfers are all impressive.

> "These are specs that wouldn't be out of place on a high end gaming desktop, let alone a laptop."

The Alienware 15 R4 is one of the most powerful laptops we've ever tested. It can be considered a desktop replacement but is still somewhat portable compared to some of the other extreme behemoths out there. Yes it's expensive, but then that's what you'd expect with a high end spec like this. If you're looking for a powerful laptop for shredding every task you want to throw at it, then the Alienware 15 R4 is definitely worthy of serious consideration. *CHRIS SZEWCZYK* PC

+
- Great looks
- Gorgeous 4K G-Sync screen
- Decent battery life

-
- Pricey as you'd expect
- Max-Q GTX 1080 is quite a bit slower than the non Max-Q

VERDICT:
More than just a gaming machine, and more than just a gaming laptop. This can handly anything.

8

	3DMark Firestrike	Rise of the Tomb Raider	Ghost Recon: Wildlands	Total War: Warhammer II
	Score	1920x1080, Very High DX12, Avg FPS	1920x1080, Very High DX11, Avg FPS	1920x1080, High DX11, Avg FPS
Asus GL503 Scar (GTX 1070)	12685	109.68	64.11	78.6
Metabox Alpha N950 TP (GTX 1060 6Gb)	10364	69.29	55.22	59.0
Acer Predator Helios 300 (GTX 1060 6GB)	9753	67.13	51.88	57.7

LAPTOP

ACER Predator Helios 300

A gaming laptop that won't break the bank

PRICE $TBA
www.acer.com.au

The Acer Predator Helios range of laptops has proven popular thanks to its good bang for buck. The Helios 300 (specifically the G3-571-768G model) we have on hand for review doesn't set the world alight specification wise, but it does offer value and should provide a good gaming experience for the value conscious buyer. How does it stack up in a tough marketplace?

The Helios 300 we were provided features an Intel i7-7700HQ CPU and a 6GB GTX 1060. While the 7700HQ is now considered an older model, it provides more than enough gaming grunt. The 1060 is a good pairing for the 15.6In 1920x1080 screen, meaning all modern games will run at their native res without sacrificing much, if anything, in the way of eye candy. There's 16GB of DDR4 memory onboard, along with a 128GB SATA SSD and 1TB 5400 RPM HDD.

The design is quite aggressive. There's not much subtle about it, with its big Predator logos and splashes of red styling meaning there's no mistaking this for anything other than a gamer's notebook. At 2.69Kg it's not one of the uber slim models that are all the rage, but they tend to be noisy, and we're happy to say that this Acer is one of the quietest gaming laptops we've ever heard. That gets it a big tick. The lid and interior feature brushed metal while the outer shell and monitor bezels are plastic; overall it feels quite well made. There's a total of three Type-A USB ports, a Type-C port, an SD card reader, HDMI port, Ethernet and headphone/mic port.

The screen is pretty average, however. For a budget-oriented laptop, this isn't really an issue, though if you are planning to do anything that requires good colour accuracy there are better choices. Games look fine, and in general usage we aren't too disappointed. The keyboard and trackpad are fairly unexceptional, though not bad at all.

As mentioned, a GTX 1060 is a good choice for a 1080p screen and the Helios 300 acquits itself well. It does fall a touch behind compared to some other GTX 1060 equipped units, which seems to be the result of a conscious choice by Acer to keep noise levels down. This means the GPU drops back from its highest possible turbo modes. We have no problem with losing a few percent of performance if it means we don't have a tornado sitting on our desk. All of our game benchmarks were perfectly playable at high settings. The 7700HQ can't match the newer generation six core offerings, but they also come with a price premium.

> "...we're happy to say that this Acer is one of the quietest gaming laptops we've ever heard."

The Acer Predator Helios doesn't have the latest and greatest CPU, and the battery life isn't fantastic but it does provide good gaming performance in a well-rounded package that is surprisingly quiet. If you're after a laptop that can handle 1080p gaming as well as some study in the library, this one is worth a look. *CHRIS SZEWCZYK* PC

+
- Good bang for buck
- Quiet for a gaming laptop
- Good full HD gaming performance

-
- Screen is ordinary
- Performance is a few percent behind similar models

VERDICT:

Not a high-end machine, but for bread and butter gaming, the Helios 300 is hard to beat.

7

	Geekbench 4		PCMark 10	PCMark 8
	Single thread score	Multi thread score	Score	Battery life (Minutes)
Lenovo X1 Carbon (i5-7200U)	3556	6492	NA	6h 13
Dell XPS 13 (i5-8250U)	4063	11643	3686	6h 25

LAPTOP

Dell XPS 13 (2018)

Dell nails it again

PRICE $2399
www.dell.com.au

If you've ever considered a business or ultra-portable laptop, the chances are you've looked at the Dell XPS series. They have long been considered some of the very best laptops on the market. The competition never stands still though, so an update was welcomed. It's not easy to improve on an already excellent design. Can Dell keep its position at the top of the pops?

Take one look at it. It just oozes high end appeal thanks to its aluminium shell, amazing screen and solid build quality. Our test sample came equipped with an optional rose gold shell combined with a white glass fibre like interior. We understand this design is simply a matter of taste, but it does appear a bit garish to our personal taste.

Our unit came equipped with Intel's 8th generation i5-8250U CPU. This model is a quad core, a very welcome upgrade over previous dual core designs. There's also 8GB of LPDDR3 memory and a 256GB NVMe SSD.

Dell has moved right into 2018 by equipping the XPS 13 exclusively with USB Type-C ports. Though there is a Type-C to Type-A adapter included in the box for those who need it. Two Type-C ports also support Intel's Thunderbolt 3 standard, so you could hook up an external GPU if you wish to. There's also a Micro-SD card reader, 3.5mm headphone/mic port and a security lock port. Interestingly, Dell chose a Qualcomm Killer AC Wi-Fi adapter, something you would normally see on gaming oriented laptops.

One of the strengths of XPS machines have always been the screens on offer, and the latest XPS 13 with its 1920x1080 13.3in screen is no exception. Colours are vibrant, the brightness uniform and text is sharp and well contrasted without appearing over saturated. The bezel is tiny too. It's simply gorgeous.

Performance wise, the i5-8250U CPU absolutely crushes the equivalent previous generation 7200U dual core. In Geekbench 4, we get a single core result of 4063, which is already over 10% faster than the 7200U, while the multi core score jumps to an incredible 11643. The latter number is new territory for Ultrabook class models, leaving 7th generation models in the dust.

Battery life is a standout strength of the XPS 13. Despite the move from a dual core to a quad core, battery life does not seem to have suffered at all. In fact in PC Mark 8's battery test, we got a result of 6hr 25m, which actually puts it ahead of an i5-7200U equipped Lenovo X1 Carbon, which was already considered to have excellent battery life. In real world use, obviously the XPS 13 will easily see you through a full work or study day, with battery life to spare.

> "Performance wise, the i5-8250U CPU absolutely crushes the equivalent previous generation dual core."

Overall, the Dell XPS 13 continues to be one of the best ultra-books on the market. The upgrade to an 8th generation quad core processor is a big step forward, yet battery life is still excellent. Dell knows the XPS 13 is a top laptop design. If it ain't broke, don't fix it. *CHRIS SZEWCZYK* PC

PC PowerPlay POWER AWARD

+
- Gorgeous and sturdy design
- Excellent screen
- Powerful 8th Gen processor

-
- Webcam placement

VERDICT:

Dell does it again. The 2018 XPS 13 adds a quad core CPU and still the most desirable ultraportable Windows laptop money can buy.

9

CASE

Thermaltake Level 20 GT

It's not for every builder, but every builder will want one.

PRICE $369
www.thermaltake.com.au

Sometimes you fall in love with a piece of hardware, see the price, and your only reaction is "Tell him he's dreamin', son!" Then, other times, you fall in love with a piece of hardware, and you see the price, and are forced to admit… "You know, that really is reasonable." So let's address the rather impressive $370 price-point of Thermaltake's new flagship case up front – it definitely falls into the latter category.

It's also one of the heaviest pieces of PC componentry we've had to heft onto our testbench in some time, the total boxed package weighing in at a not inconsiderable 22Kg. Keep your back straight and bend at the knees indeed.

But all that cash and mass brings with it a lot of perks and features.

Tempered glass has become almost as much of a high-end PC necessity as RGB on lighting (don't worry, we'll get there), but the Level 20 GT scoffs at other cases and their measly attempts at glassy prestige – here, you'll find both side-panels, the front fascia, and even the top of the case sheathed in 5mm-thick, subtly smoked, tempered glass. The effect is pretty stunning, and while the curving, brushed aluminium panels that link each pane together may not be too everyone's taste, the Level 20 manages to walk a fine line between gaming prestige hardware and simple enthusiast aesthetic. When everything's installed and you turn on your PC on, the look is amplified by the two included RGB-lit, 140mm Thermaltake Riing fans. They look hyper-striking under the smoked glass – and I say that as someone getting more than a little sick of RGB lights on everything! And if you don't like RGB lighting, you can pick up a non-RGB version of the case for just $249, which is much more affordable!

There are two insets on either side of the leading edge of the front panel, and here's you'll find some generous IO options. On the right are two each of USB3 and USB2 ports, as well as a Type-C port. On the left are the usual audio IO, power, and reset buttons (which feel wonderfully engineered), as well as an old-fashioned hard drive activity light. Old school!

> During installation, you can even remove the doors entirely, and taking them off and on is really simple.

In back is a smaller, but still RGB-stricken fan, and the usual access slots, including a removable expansion slot cover.

The side-panels each come with a lock, in case… you don't trust your flatmates, I guess, and once unlocked they swing out and backwards on remarkably smooth hinges. During installation, you can even remove the doors entirely, and taking them off and on is really simple. The solidity of the case and firm, rubber feet means it sits on any surface immovably, too.

With the panels swung back and

removed, the Level 20 GT's interior presents a wealth of possibilities for any ambitious builder. Speaking of which, unless you are ambitious… it must be said that this case is likely overkill. With this much room, and this feature set, you're wasting your money if all you're installing is a couple of drives, a single video card, and stock cooling. I mean, your PC will still look good, but…

The Level 20 GT is aimed at hardcore builders. There are two dual-bay hard drive caddies (that can also mount SSDs) that can be removed entirely or reinstalled to match whatever mad design you might come up with, while there's a single SSD mount in the main interior space, and four more on removable mounts behind the motherboard plate. A metal shroud covers the PSU slot, but it features a built-in Perspex window of its own; with so many PSUs coming out of Taiwan in the near future that feature their own LEDs or RGBs, this is nice forward-looking addition if you're a lighting addict.

Just above this shroud is a bracket that can support video cards in an optional vertical mounting, and if you don't want to mount your cards that way (and this really is a case that begs an SLI setup) you can simply remove it.

The options for cooling are massive. You can fit up to a 360mm radiator in the space below the top panel, and up to a 420mm unit in the right side or front panel. The rear panels and bottom can fit smaller, up to 240mm, and if you prefer fans you can install 200mm fans in the front and top panels. There's a dedicated bracket for a liquid cooling pump just below the HDD cages.

And if you really are excited about case lighting, the RGB Plus edition of the case – which is the one we reviewed – comes with a dedicated controller with four DIP switches for a range of lighting solutions.

Wow.

There are very few cases on the modern market that are as striking as the Level 20 GT, both in terms of its massive first impression, through to its room for enthusiast-grade PC building. Is it expensive? Sure it is, but if you're filling this case with the kind of hardware it deserves, the cost is a mere drop in the ocean. And you'll end up with a case that will last for many years to come.

Bravo Tt. *DAVID HOLLINGWORTH* PC

+
- Massively roomy
- Incredible cooling options
- Wonderfully engineered

-
- Very heavy
- RGB version is expensive

VERDICT:

One of the best specced and most expansive cases we've seen in years, and a worthy investment for a serious PC build.

9

STREAMING BOX

Nvidia Shield TV with Controller and Remote

Sure, it has a controller - but is it really for gamers?

PRICE $329
www.nvidia.com/en-us/shield/

Nvidia's Shield is one of those things which is very exciting as an idea, but a little less than that in action. Which, by the way, is not to say that it is a bad device - far from it, it is an excellent streaming box with a lot of great features and apps.

As a games console that leverages the power of your beloved PC and its collection of Steam games so you can play them on a nice big TV? Well, your mileage may vary on that front.

Setting up the device is pretty simple, and if you already have an Android powered tablet or phone, you can simply port the settings from that to get the Shield dialed in to your home network. Of course, like some walking, breathing technological curse, this did not work for me, though manual setup was similarly breezy. In a lot of ways it really is just another smart box for your goggle box - a small plastic enclosure and a near ubiquitous stick-style remote; but there's a lot more going on under the hood. There's an Nvidia Tegra processor, 16GB of onboard storage, gigabit ethernet, wireless connections, Bluetooth, and HDMI 2.0b connectivity alongside two USB 3.0 ports, which can be used to expand the onboard storage.

It's packed with audio and video codecs, and filled to the brim with services right out of the box - you get Nvidia Games, Netflix, various Google stores (the device also runs Android Nougat, and runs it smoothly), Plex, Vudu, and more - and you can of course download more apps straight away, like Kodi. And of top of that, it's got Chromecast baked in, and I suspect the most updated version - I've been running a first-gen Chromecast for years and it has been getting very flaky. Casting to the Shield is, on the other hand, easy and silky smooth.

It's a really great streaming box, and has integrated into my household (and gained my non-gamer flatmate's approval) pretty easily.

But what about the games? Welp.

I have no issues with casting to my TV, my old Chromecast, or even to the Shield. I have zeros issues with my phone, and have generally good signal strength around the house. But streaming games from my PC were riddled with data dropouts and slow streaming speeds. Not unplayable, but not exactly the dream we'd been promised. As to streaming Nvidia's own games remotely - and there's a good selection - that's even less doable. At first it insisted it had be switched to the 5GHz band, which I did, and then informed me that streaming was impossible - my ping was too high. It's a shame, because the included controller in this version (there's one with just the remote for $249) is really quite good.

"As to streaming Nvidia's own games remotely - and there's a good selection - that's even less doable."

So is it good? There's more to it - like Android games for instance - but ultimately it depends how you look at the device. As a streaming box that can be capable of some nice tricks every now and then, it's great.

As a PC-powered games console? Not so much, at least in my experience.

DAVID HOLLINGWORTH PC

+
- Slim enough to fit anywhere
- Great peripherals
- Strong lineup of streaming services

-
- Problematic wireless performance
- Some features flat out don't work
- Your mileage may vary

VERDICT:

This is a tough one, depending on what you think the Shield's core experience is. It's a great streamer, but has a ways to go as a game box.

8

HEADPHONES

Plantronics RIG Pro 500 Esport

Premium build, premium sounds.

PRICE $199
www.plantronics.com/au

I've looked at a lot of headphones this month (there must be something in the water, because everyone's releasing them all at once), but only two really stand out as a pair that I would consider ditching my venerable Plantronics Gamecom Commander for. You literally cannot get a set of these for love or money these days - they were a limited run and cost $350 at launch, and frankly they're the best gaming headphone I've ever used.

But they're also five years old, so it makes sense that cheaper, modern headphones are catching up. And of the ones I've looked at, Corsair's wireless H70s come close (great sound, wonderfully convenient), and it shouldn't be surprising that Plantronic's own new RIG Pro 500 Esport does too.

There's the usual RIG features - they're a lightweight set of cans with earcups that can be moved up and down slots in the headband, rather than having a slotted headband itself - it's bit of a gimmick, but it also works. The detachable mic mutes when folded up, offers somewhat iffy noise-cancelling to offer clear comms, but it does still pick up ambient sounds, like music. Still, it's clear enough.

The Pro features are pretty neat, though. An aluminium headband and beautiful cup-backs offer strength and style, and a spare set of ear-cushions offer a dual material option for isolation, or memory foam for comfort. The really cool feature, though, is a dedicated widget that lets you plug your mic headphones into an Xbox controller, with a built in volume control. The inline volume control is a simple slider, but it can lock at top volume - if you just want to ignore the headphones, and maintain volume either in-game or via a keyboard control or in Windows, it's a nice touch.

Features aside, it's the rich and very detailed soundscape that makes the RIG Pro 500 Esport such a killer choice. The 7.1 sound may be virtual, but the 50mm drivers and Plantronic's own wizardry deliver the most clear spatial sound I've ever heard. In PUBG you can locate gunshots near or far, footsteps as they approach and run past you, and even pick up sounds that my beloved Commanders have never managed to catch, like the jingle of your equipment as you run. The bass isn't over-powering, either. Gunshots and other intense sounds are satisfyingly punchy, but you can still happily listen to music or movies without feeling like you need to dial it back.

"Features aside, it's the rich and very detailed soundscape that makes the RIG Pro 500 Esport such a killer choice."

And they're light enough that you can easily wear them for extended sessions without feeling like you're head's being squeezed in a vice.

And all for $199, which is what you'd expect. If you've the money, I think Corsair has the overall better offering, but the RIG Pro 500 Esport has a lot of features of its own to recommend, like Dolby Atmos - and they even come with a free code. These really are our budget choice for gaming headphones.
DAVID HOLLINGWORTH PC

PC PowerPlay POWER AWARD

+
- Lightweight and comfy
- Well made
- Excellent virtual 7.1

-
- Shorter cable than we'd like
- Not many games support Atmos

VERDICT:

Great headphones on their own, but the amazing price makes them among the best we've ever tested.

9

HEADSET

Corsair HS70 Wireless Gaming Headphones

A stunning achievement for gamers.

PRICE $179
www.corsair.com

It's really, really nice to open up a box, slap a set of headphones around your ears, and actually get excited. It's easy to get a little jaded in this old reviewing business, so remembering just how important a truly good product can be is kinda cool. And exciting, important, and cool pretty much sums up the new HS70 headphones from Corsair.

There's a lot to like, but the key feature will always be sound, and the HS70 cans manage to balance gaming pedigree with everyday subtlety. Many gaming headphones boost the lower range to punch up gunshots and explosions with chest-pounding power, but the HS70s, while offering clear and solid audio in-game, don't go too far over the top. More importantly, the virtual 7.1 surround sound actually does its job very well, delivering clear positional audio at all virtual distances. Our go-to game for such testing is PUBG, and here the HS70s shine, allowing you to pinpoint distant gunshots, or track the location of that sneaky bastard stalking you on the other side of a wall.

This balancing act also makes these ideal headphones for listening to other media. Whether its music or movies you can enjoy every part of the track, without the thumping bass focus getting in the way and muddying the experience.

Basically, these are my new go-to headphones in terms of audio. They're comfortable, to boot, solidly made, and offer excellent audio isolation – both in terms of blocking out sound around the listener, and the audio being pumped out by the cans themselves. And while they're undeniably gaming focused, you can detach the mic for when you just want to listen to stuff, and the design is based around the rest of the HS range. In other words, they don't look like something from an aggressively designed science fiction film set.

The HS70's wireless connectivity is pretty cool. With a USB dongle plugged into your PC, you can listen to them up to around 40 feet away and still get a clear connection. Blocking walls and other items will reduce that, but I can essentially listen to these headphones from one end of my apartment to the other. Controls are handily placed at the rear of each cup, with a useful volume wheel on the left, as well a mute button for when the mic is attached, while on the right is a power button.

The onboard battery is rated for around 16 hours, though heavy use will effect that number somewhat. Your best bet for extended listening is to make sure you turn the HS70 off before putting it aside, but even if the battery does run down – and the headphones beep to let you know that's happening, you can still listen to them while they're plugged in to charge.

> "...the virtual 7.1 actually does its job very well, delivering clear positional audio at all virtual distances."

Given the HS70s come in cheaper than some wired choices in this issue, we are very impressed. Right now, these are probably right in the sweet spot for price and performance, and if you're in the market for a new set of gaming 'phones (that also work with a PS4), you can't go wrong with these.
*DAVID HOLLINGWORTH*PC

PC PowerPlay POWER AWARD

+
- Outstanding 7.1 audio
- Clear playback in other media
- Excellent wireless connectivity

-
- Won't connect to your phone.

VERDICT: **Our new favourite set of gaming headphones. If it could connect to my phone it would be my FAVOURITE set hands down.**

9

HEADPHONES

Edifier G4 gaming headphones

Punchy vibrations and glowing LEDs cannot save this set of gaming cans.

PRICE $89
www.edifier.com

They say first impressions are the most important. So, when less than sixty seconds after taking Edifier's new G4 gaming headphones out of their packaging, I'd managed to pull the microphone clean off its retractable boom... it was not a good start to your relationship, and to be perfectly honest, things kind of went downhill from there.

Aside from the mic falling off – it now dangles like some strange earing by the side of my face, and seriously, I didn't treat it all that harshly, either – the construction is otherwise solid, with a firm spring in a the handband (which can thrum if the headphones are struck at all, and make the vibration function even more severe), and round, Beats-style earcups complete with glowing LEDs to prove your gamer cred or something. Everything's padded where you'd expect it, and the G4s are certainly comfortable, at least for short periods.

The issue is that they get a little warm after a while, especially if you're using the aforementioned vibrate function – this, which can be turned on or off via the inline controls, kicks in a set of heavy drivers that rumble your noggin in tune with in-game action. Essentially, it's a very heavy, optional bass, and while it works, it's not necessarily good. It actually makes gunshots and other sharp noises in shooters like PUBG deeply uncomfortable, and turning it on for music does pick out the lower frequencies, but at the expense of a more balanced audio.

It's a feature that you're definitely paying for, despite the mid-range, sub-$100 price tag, but it's a feature you'll almost certainly want to avoid.

Otherwise the G4's in-game sound quality is perfectly adequate, and Edifier's virtual 7.1 surround sound implementation is remarkably accurate, allowing for precise locating of effects in-game. The mic is decent, if a little echoing, but the mic – when it's not dangling from a pair of wires – also lights up with an LED to show that it's working, and having something lit like that just at the edge of your vision is more than a little distracting.

On the up side, the long, 2.5m cable is certainly a plus if you move about during gaming sessions, and the inline sound controls are easy to access. They connect via a USB port for simple and plug-and-play functionality, which also means they'll work with a Mac or PS4, but are not so versatile that you can take with you to use with your phone.

> "having something lit like that just at the edge of your vision is more than a little distracting."

And, to be honest, I wouldn't recommend you do, even if you could. For the same price you can pick up a pair of Corsair HS60 surround sound headphones which are pretty much superior in every way, and include a detachable mic, rather than a telescoping one. Though, if bling and head-punching bass is your thing, perhaps you'll prefer the G4s.
DAVID HOLLINGWORTH PC

+
- Long cable
- Precise surround sound

-
- Poor build quality
- Heats up
- Overdone vibration effect

VERDICT:
The gimmicks cannot save a set of sub-par headphones, in a rare misstep for Edifier.

6

HEADPHONES

MSI Immerse GH70 Gaming Headset

A set of gaming cans that can light up your life, but not your ears...

PRICE $149.00
au.msi.com

Out of the box, the Immerse GH70 is going to turn heads, I'll say that at least. It's a very large, very brightly lit, and very aggressively designed headset – MSI is not aiming for subtlety here. Rather than feature an adjustable headband that clicks to the right size, the GH70 has a single metal span supporting a padded, sprung headband. It looks like it should be really uncomfortable, but on your head – and my noggin is on the larger side – it sits lightly and comfortably. My work colleagues were rather... taken aback at the size and gently flashing RGB lighting, so if you prefer a lower profile look, maybe look elsewhere. You can turn the lighting off, of course, but then... why are you buying RGB cans in the first place? The lighting can also be set to sync with the rest of your PC hardware, too.

Everything's great while they're on your head, but the large size and metal band mean the GH70s are remarkably uncomfortable to have hanging around your neck. It's like wearing a neckbrace.

The GH70's are a USB-powered headset – you can't have the fancy lighting otherwise – and feature an inline control box for volume, mic mute, and turning the headset's virtual 7.1 on and off. It's certainly handy, but for some reason MSI's designed the box upside down; with rubber feet, it's clearly designed to sit on your desk next to your keyboard and mouse, but leaving it properly inline sees all the labelling reversed. Why?!

The true proof to any headset's pudding, however, is sound quality. For a $150 headset I'd normally expect slightly better, but with the HG70s you're very much paying for more than just sound. Music is crisp and full-bodied, though the mid-range does feel a little neglected, making vocal heavy tracks a little light on punch.

Getting into a game, however, and turning on the apparently built-in virtual 7.1 surround sound is... less than compelling. That was when I noticed the small-print in the Quick User Guide suggesting I download 'software' from the product's website, where I learn that you need MSI's Gaming Center software to get the 7.1 working. This does deliver an improvement, but there's still an echoing quality to playback – even in open game areas – that you don't pick up with other virtual surround solutions. This does work very well for enclosed areas, but everywhere else feels like a distraction. The clarity of sound is certainly good, and you can pick out all kinds of discrete elements. But that echo... Yeah, nah.

> "The clarity of sound is certainly good, and you can pick out all kinds of discrete elements. But that echo..."

There are some other neat features, like a carry bag for when you take your headphones on the road, and a very nice set of extra earpads, which feature a cloth mesh rather than the default leatherette pads. But there's enough distracting drawbacks that the GH70s don't quite make the cut. When you consider that you can spend an extra $20 and get the excellent Corsair HS70 Wireless headphones, which are much lighter, smaller, and better-featured, the Immerse headphones look even less of a prospect. *DAVID HOLLINGWORTH* PC

+
- RGB lighting
- Comfortable design
- Spare ear-pads

-
- Poorly designed control box
- Echo-y 7.1 surround sound
- RGB lighting

VERDICT:

A big and bold statement from MSI, but one that fails to back it up with performance.

7

HEADPHONES

HyperX Cloud Stinger Core

One of the most pleasant audio surprises in ages.

PRICE $69.95
www.hyperxgaming.com

First things first, yes, this is a console headset. So, you may well ask "David. Mate, what do you think you're doing?"

Well, the lines have blurred considerably on console/PC hardware over the last few years, and while the HyperX Cloud Stinger Core (I can only assume no one could settle on a single name) proudly proclaims its PS4 compatibility, it works on just about any device – Xbox, your smartphone, and yes, your PC. On top that, given that it's short cable is designed for plugging into a controller – and many PC gamers do use controllers – we feel it's still a realistic use-case.

So, my answer: "Mate, hear me out."

They say first impressions are everything, but the Cloud Stinger Core is actually – at first – quite deceiving. There's just no denying it – out of the box, they feel cheap as, and about as 'quality' as the $70 price tag suggests. But then you start noticing some stuff. While light and plasticky, the headband has an insane amount of flex, for instance, the headband is extendable on fine looking steel arms, and thank heck there's not a single RGB LED in sight – just a simple blue, plastic trim.

But also odd? These are the first headphones we've seen in a LONG time that have a lead running to each earcup. This is not an issue of you're playing with the Cloud Stinger Core plugged into a controller, but it is if you're plugging it into a PC, as the cords hang rather awkwardly. Also, the lead is rather short.

But plop the Cloud Stinger Cores on your head, and some kind of weird magic happens. They're certainly never going to compete with the likes of Corsair's and Plantronics' offerings this issue, but they sound a whole lot better than the price tag would suggest. The soundscape is a little flat, yes, but there's punch to everything you can hear, and if the bass is a little overworked… these are gaming headphones after all. We did mention that can be plugged into your phone and do double service as music headphones, but I would avoid it. The bass really does get in the way.

Even more impressive is that despite not offering any kind of surround sound, the directionality of the Cloud Stinger Cores is still pretty good. I was able to pick the location of gunshots around me with pretty good accuracy, though picking their exact range was a bit more trouble. I've used quite a few more expensive headphones with dedicated surround sound this month, and the Cloud Stinger Core is on par with some of them.

> "There's punch to everything you can hear, and if the bass is a little overworked… these are gaming headphones after all."

Which I just did not expect.

Obviously, in some ways you are getting what you pay for. The inline controls are basic, the console-focused cord could be an issue.

But if you have a variety of gaming platforms, want a pair of headphones that fit them all, and is cheap… yeah, these are hard to walk past.

DAVID HOLLINGWORTH PC

PC PowerPlay SMART BUY

+
- Very light
- Surprisingly good sound quality
- Great price

-
- Short cable
- Not great for music

VERDICT:

Great gaming audio in a versatile and overall CHEAP package.

8

THE RAZER BLADE

IF YOU HAD TO DESCRIBE YOUR PERFECT LAPTOP IT WOULD PROBABLY BE THIS

When it comes to laptops, there's usually a choice between a sober, work-friendly model, a bulky gaming machine and a svelte ultra-portable which sacrifices power for battery life. For years we've had to choose between one or the other or, in rare instances, a model that can excel at two of three facets. But not anymore. Finally, the trifecta has been achieved! Say hello to the latest Razer Blade.

A TOUGH YET THIN STUNNER

First off there are the looks. The matte-black finish oozes sophistication and yet it would not look out of place at a LAN party or in an office. The super-thin lid is solid enough to protect the screen from knocks and its new, sharper lines look cutting edge. The screen bezels are now unbelievably thin on either side and make more room for more screen: Razer has somehow increased the display size from 14 inches to 15.6 inches with only a minimal effect on chassis dimensions.

There are different screen options available for different requirements too and all leave the factory having been individually colour-calibrated. One choice is the sRGB-certified, game-friendly, Full HD gaming display with a 144Hz refresh rate for silky-smooth gaming. There's also a 4K Ultra High Definition unit that's certified for the Adobe RGB colour space for those who eschew gaming gains for maximum resolution. The latter is also available as a touch screen. Whatever you choose, the vibrant colours look stunning when set against the signature monolithic black of the chassis.

And what a chassis it is! Milled from a single block of aluminium, it's so solid that it feels almost bombproof and yet this aerospace-grade technology means the whole package weighs just 2.1KG. It's one of the thinnest models in its category too with a height of just 17mm and a width of just 35.5cm.

A DELIGHT TO USE

Set against the chassis is the RGB LED keyboard where every key is individually lit. Razer's Synapse app allows for multiple lighting effects which can range from mesmerising, decorative colour fluctuations to performance-enhancing, game-specific lighting configurations. The Razer Chroma technology that drives it means you can even synchronise your lights with external Razer devices. Whatever your preference, the full-sized keyboard and low travel keys are comfortable to type on for extended periods, whether that's for typing a lengthy office report or owning n00bs into the small hours.

Flanking the keyboard are stereo speakers which will impress you with their performance – you won't expect the power or the rounded, punchy bass that exudes from such a small chassis. They also support Dolby Atmos technology so you can rest assured that the best multimedia and movie audio effects will be compatible. Adjacent to these resides a large, glass-covered touchpad that is super responsive.

IMMENSE POWER

But what lies beneath? The new Razer is no show pony. Inside this mild-mannered reporter of a notebook is a true, thoroughbred, powerhouse of a super machine. Sporting the latest and greatest Intel 8th Generation Core i7 processor – a 2.2GHz hexacore i7-8750H with 4.1GHz Turbo Boost – that's flanked by fast, 2,666MHz RAM and a speedy NVMe hard drive, the Razer flies through any processing task that you throw at it. But that's not all. It also sports discreet graphics to the tune of Nvidia's GTX 1070 GPU which means it easily plays the latest and greatest games at the highest settings which, of course, look fabulous on the amazing screen. It's a gamer's dream! (If for some reason you require even more power, know that Razer's Blade is also compatible with the Razer Core external GPU enclosure.)

▲ Stylistic flourishes adorn the Blade, while thoughtful design and features make it a dream to use.

Now at this point some gaming notebook aficionados may be shifting in their seats recognizing that powerful processors in small chassis can frequently cause overheating issues which can simultaneously make notebooks uncomfortable to use while suffering performance throttling. But once again Razer has you covered.

Not only are Intel's 8th generation processors and Nvidia's Max-Q technology-wielding GPUs designed to operate optimally at high temperatures, the layout of Razer's chassis has been specially tailored to deal with heat dissipation. It uses Razer's special, copper, vacuum-sealed vapor chamber which is more efficient than the traditional heat-pipe cooling methods used in other laptops. The chamber contains deionized water which turns to vapor while quickly and efficiently carrying heat to the integrated heat exchangers. Bleeding edge technology such as nanoparticle Nasbis sheeting and graphite-based pads are used to further control heat and reduce hotspots. All the while, twin 44-blade fans quietly move high volumes of air across the components and away from the notebook.

> "This is an ultimate laptop. It excels at everything and leaves no key feature unaddressed"

THE COMPLETE PACKAGE

Following that back to the outside… in a laptop that has everything you need to support the most up-to-date connectivity and Razer provides. There are three USB 3.1 Type-A ports for the fastest, traditional connections, plus a Thunderbolt 3 Type-C port for the latest devices. Video out is catered for with a full-sized HDMI 2.0b port plus a Mini DisplayPort (version 1.4). Wi-Fi is taken care of thanks to Intel's AC 9260 dual-band wireless chip and BlueTooth 5 is also supported. Finally, above the screen is an HD webcam that sits between dual-array microphones for crystal-clear speech.

But what about portability? It's all well and good having a laptop that does it all, but it's not much cop if you can't stay away from a power socket for more than a few minutes. Once again Razer rises to the challenge and nails the trifecta: you can expect the Blade to playback Full HD movies for a whopping six hours! If you need to perform some heftier tasks while out on the road, know that it ran PCMark's gruelling battery test for almost four-and-a-half hours!

This is an ultimate laptop. It excels at everything and leaves no key feature unaddressed. It's available in multiple SKUs from $2,900 (Nvidia 1060 graphics, 256GB hard drive and 60Hz screen) through $3,999 (Nvidia 1070 graphics, 512GB hard drive and 144Hz screen) all the way up to $4,699 for the 4K touchscreen version. Whatever your preference, there's a Razer Blade that does it all available for you.

▼ The new Razer Blade (centre) joins the Razer family of powerhouse laptops, which includes the Razer Blade Stealth (left), and Razer Blade Pro (right)

MOUSE

MSI Clutch GM70 gaming mouse

It glows! It transforms! But can it actually make you play better?

PRICE $139.00
au.msi.com

This year's Computex showed us a PC industry that is taking a breath. With no new major motherboard or video card releases, lots of companies are expanding into new areas, and MSI's taking a leap at gaming peripherals – first off the rank for the component maker is its new Clutch GM70 gaming mouse.

Now, I want to call this a wireless mouse, as it's clearly designed for wireless operation, but have noted that MSI has called it a wireless/wired mouse, which is a little too clever by half in my opinion. Sure, you can use the mouse in either configuration, but you don't purchase a wireless mouse to use in wired mode – and yet, the GM70 really does prefer to be tethered to your PC for optimum performance. In wired mode, the mouse may be too heavy, but it remains smooth and precise both on the desktop and in game. Unplug the GM70 (which is far more complex than it should be, with a catch underneath the mouse that you'll struggle to unlatch) and performance dropped drastically whenever my PC was under load, skipping and failing to track by varying degrees. And since games do tend to load my test PC... Well, using the GM70 in gaming situations was an exercise in frustration that had me reaching for the cable in a hurry.

It's a shame, because there is much to like. The mouse is highly configurable for lefties or righties, with two panels for each side of the mouse, so you can have a thumb rest or less hefty panel in whatever configuration you wish. There's also an optional top plate, but the difference between the two seemed minimal, at least to my eyes. There's bold RGB lighting that can be tweaked to suit, and while I always turn that off, it's there if you want to light up your desktop.

The side-panels connect via strong magnets, but getting them to attach properly is a bit tricky, as they're rather prone to not lining up properly, and scratching on your desk. And because the cable is such a chore to remove (though why would you want to?), it's easy to knock them loose in the process.

Oh. And the side buttons – two on each side – are pretty much bang-on where claw grippers like me grip their mice, making mis-keys remarkably easy.

It always feels churlish to be this critical of a company's first effort in a new arena, but as it stands this is not a great start, and hard to recommend to gamers, especially FPS players. The weight and inaccuracy in tracking is just too much of a drawback.

> "...the side buttons are pretty much bang-on where claw grippers like me grip their mice..."

DAVID HOLLINGWORTH PC

+
- Sturdy design
- Customisable panels
- Robust lighting

-
- Poor wireless accuracy
- Touchy panel attachements

VERDICT:

A great looking mouse with all the bells and whistles, but lacking in the performance stakes.

6

KEYBOARD

Aorus K9 Optical RGB gaming keyboard

A remarkably solid effort - in every sense - but Gigabyte's latest doesn't quite hit the mark.

PRICE $189.00
www.gigabyte.com/au/

Gigabyte's latest gaming keyboard, the Aorus K9 Optical, looks like exactly the kind of keyboard I prefer. Sure, I'm more than a little cynical about the RGB lighting fad, but otherwise it's a classic keyboard design, reassuringly slab-like in both appearance and apparent construction. It sits on your desk, weighty and immobile, and the all-black, relatively unadorned construction goes with any PC setup.

And while I have been warming to the K9's big selling point – its optical switches - I'm still not entirely sold on them compared to my usual, trusty, Cherry MX-powered keyboard.

The K9's switches are optical, but they're also still mechanical, by the way. There's still a hardware-based switch, but the actuation is based on an optical trigger. The benefit is that, being light activated, key strokes are faster. The switches are also longer wearing. But in use, the in-game benefits feel negligible – pro eSports types might see the benefit of the faster debounce, but for regular gamers the speed difference simply doesn't seem apparent, and the benefit of longer life similarly seems a touch overwrought. I've not had a mechanical keyboard fail on me yet before I've decided to upgrade to a newer, cooler model, and I suspect keyboards are probably the most upgraded peripheral in most people's gaming rigs, aside from mice.

The K9 uses Flaretech switches in either Red or Blue varieties, which equate to similar Cherry switches. We received a Red version for review, and they're not our favourite switch, even on Cherry-powered keyboards, but on the K9 they feel a little more… watery? The lack of clickiness is the Red's whole schtick, but the action seems particularly lacking in the Flaretech switches.

The other neat feature of the K9 is that it comes with not only spare keycaps for the WASD, cursor, and Escape keys in orange, but it also comes with spare switches, so you can make those keys offer a different tactile experience. On my Red keyboard, the spares are clicky Blue numbers, and while they're not as responsive as Cherry's (yeah, okay, I'm a fan), the combination of colour and tactile clarity is kinda neat. I think I prefer the difference in contouring that is Corsair's solution to making those important keys standout, however. Having two different switches on your keyboard while typing at length is a little odd, and it does throw off my rhythm somewhat; if you're more focused on gaming over writing, it's probably less of an issue, though.

> "…it also comes with spare switches, so you can make those keys offer a different tactile experience."

On top of that, Gigabyte claims not only is the keyboard splash-proof, but that it will also operate under water. Oddly, no IP (ingress protection) rating is given, so we've no idea how that should relate to solids like dust.

Unfortunately, the K9 is also on the expensive side for what you're getting, and it doesn't feature any dedicated media or volume keys, or a wrist-rest, or even a USB passthrough, all pretty much features you'd expect for a keyboard that retails for nearly $200.
DAVID HOLLINGWORTH PC

+
- Solid construction
- Hot swappable switches

-
- No USB
- No wrist rest
- Not my favourite switches

VERDICT:
A little overpriced, a little under-featured, and a little lacking in performance.

7

ONE AND A HALF HEADS ARE BETTER THAN NONE: THE MATH COPROCESSOR

The tradition of hugely expensive hardware upgrades intended to "improve" gaming performance is a long, and storied one. And it begins, like the universe itself, with a floating point of pure mathematics.

What makes a PC a "gaming" PC? The platform is, by its nature, multi-purpose. And yet these days, unless you're into video or animation or really gigantic spreadsheets, roughly 95% of the "performance" in your PC is dedicated to gaming.

And running the corpulent Windows 10, I suppose.

So what is it about gaming, in a fundamental sense, that means you have to spend so much more for a PC that can merely watch those games being played on YouTube? For my money (so much money, since probably 1993 if I think about it) the answer is floating point arithmetic.

Floating point arithmetic is more or less the entire reason your GPU needs to exist. Because real time 3D graphics deal in both very large numbers and very small numbers, games benefit from the way floating point arithmetic can represent numbers as an approximation. With a decimal point (or radix point if we want to get all undergraduate about it) and a base raised to an exponent (pay attention up the back there), this system is kind of like scientific notation - which you may remember as the best system for accidentally multiplying by 10,000 instead of 100,000 and failing the HSC.

Since floating point arithmetic can represent both extremely small numbers (like 0.12332 x 10^-6) and extremely large numbers (1.2332 x 10^9) it's ideal for flinging around lots and lots of triangles. Which is basically what graphics are all about these days.

EXPENSIVE APPROXIMATION

Thing is though, at the microprocessor architecture level, a logic circuit designed to do floating point operations is different to the circuit for doing integer operations (literally 2 + 2 = 4). And in the early days, more circuits meant more logic gates in the chip, which meant a bigger, hotter, and more expensive chip.

It's possible to make your integer circuit do floating point operations with software, and an extremely maths-nerd thing called a CORDIC routine enables older CPUs to do certain kinds of common floating point operations with a dedicated "floating point unit" or FPU but, again, this costs money.

Did I already say *so much money?* I'll say it again. So. Much. Money. Back in the 1980s, a brand new proper "IBM compatible PC" was an insanely expensive piece of equipment. The first 80286-based machines cost upwards of $US10,000, and the 80386s - like Compaq's epochal Deskpro 386 - were typically stickered at $US8,999. Australian pricing at the time is hard to pin down because this was pre-GST and the whole sales tax thing was out of control. Email us if you bought one!

THE FOURTH PLACE

But then Intel released the 80486, which it had to rename as the i486 because suddenly they weren't allowed to trademark numbers anymore.

The i486 was a massive change for personal computers (by which I mean the chip, not the trademark law dispute). It was the first CPU with more than a million transistors, and it even had a dedicated floating point unit right there, on-chip.

> It was the first CPU with more than a million transistors, and it even had a dedicated floating point unit.

▼(below) The 486 processor - quite actually your daddy's CPU. (at bottom) The 386 processor, also... you get the picture, they are quite old.

The i486DX 33MHz was the heart of the 'my-dad's-rich gaming PC' of the new decade. With 4GB of RAM and maybe some kind of "VESA-compatible" super VGA chip on board, it could even play Doom in high detail mode, full screen! And that was largely thanks to its integrated FPU.

But I'm betting the majority of Aussie PC gamers in the early 1990s didn't get a 486 until at least the mid-90s, because the price of these machines was nuts.

Even as late as 1992, when my dad and I went down to Osborne computers in Penrith, we discovered a full-fat i486DX-33 still cost $4999. Though it did include a 14-inch CRT monitor.

Lucky for me and whatever infinitesimally small portion of a US dollar I contributed to Westwood's royalties for Dune II, sitting right next to that $5000 beige brick was an alternate model called an i486SX-25.

It was slimmer, included something called a Soundblaster, boasted of Western Digital VESA graphics (not a typo), and had an amazing new innovation called a CD-ROM. It was also a snip at $3999.

So home we went with our new i486SX-25 and a free copy of a Sherlock Holmes "interactive CD". And all was well, and Osborne only had to send a man out once to replace the entire motherboard and give us the driver discs for the right kind of Soundblaster.

Then Strike Commander came out in 1993 and I realised I'd made a huge mistake.

CARRY THE ONE

Strike Commander - from Star Citizen's Wing Commander: The Movie's Wing Commander's Chris Roberts - was a fully polygonal 3D F-16 action-based flight "simulator" that used a crazy new effect called gouraud shading. Gouraud shading didn't make the planes look any less boxy or unrealistic, but it did look very 1990s and Silicon Graphics and so it distracted you from the game's Airfix flight model.

Gouraud shading also needed an FPU to do the hard maths, and our i486SX didn't have an FPU. This is how Intel was able to offload a bunch of i486DXs that didn't come out right, and Osborne was able to sell the resulting PC much cheaper and packed with many more extras for me to break by looking at.

And this is how I came to learn of the first very expensive and only marginally effective hardware upgrade done purely for the sake of gaming performance, ever.

It was called a math coprocessor (sic), and while it was marketed as a plug-in FPU for the i486SX, and labelled an i487SX, it was actually an entire whole i486DX CPU. Why? There is a long explanation but [looks at current word count] let's just say "it was the 90s" and leave it at that.

US magazines from 1993 said the i487SX retailed for "around US$400" but I had no idea what it cost in Australia. Beyond the realm of fantasy for someone on $10 pocket money a week.

PUNCHING TWO CLOCKS

It was probably a good thing I didn't have a credit card in 1993 and didn't buy that i487SX plug-in upgrade. Because shortly afterward, Intel figured out how to run the internal processor clock at twice the clock rate of the external bus clock. What does that actually mean? Who knows, but for some reason it inspired Intel to start using cool names, and thus was created the legendary OverDrive plug-in chip that left the i487SX in the absolute dust.

Bitterly, to the jeers of my off-brand and occasionally on-fire 486DX2 owning friends (see boxout), I learned that my fancy 4GB of RAM and my caddy-based 1x CD-ROM meant nothing, in the absence of another 25MHz and hardware floating point calculations.

Eventually my dad relented and, in 1995, drove to what appeared to be an illegal business run out of a residential house in Parramatta by super-angry dudes from a country which I won't name but which has a Famously Growing Economy, and helped further boost that economy by spending something like $850 cash on a motherboard that was even more off-brand than the PCs my friends had, so I could run Privateer 2: The Darkening.

The 2x CD-ROM that would play the FMV without crashing the whole PC, I had to pay for.

THE POINT CEASES TO FLOAT (AT LAST)

The math coprocessor (sic) is important because in many ways it started the great gaming PC hardware levelling treadmill. Before the i487SX and the OverDrive, an "IBM-compatible PC" was what it was. You only cracked it open to repair it, unless you were some kind of IT academic.

But now, oh now we have so many options to choose from! And best of all, the moment we actually press "confirm order" and our package gets kicked downstairs by a courier, whoever made whatever it is we've just bought will put out a social media blast about the next, way more awesome generation of the very same thing.

It's probably some kind of addiction. We probably need professional help.

But who can afford it? *ANTHONY FORDHAM* PC

SO MUCH POWAAAAAH!

In 1994, Intel pushed this clock-doubling thing absolutely as far as it could, when it released the IntelDX4. You might think that since the i486DX2 doubled the internal clock speed, the IntelDX4 would quadruple it. Nah, it only tripled it. But who cares: the top-end IntelDX4 was the first consumer CPU to crack 100MHz. Can you imagine that many hertz? So many hertz they had to redesign the sticker for the front of the beige tower, like when petrol hit $1 a litre. I knew a guy whose dad bought him a PC built around an IntelDX4. He had no idea what to do with all that power. Or his old MFM hard drives.

HOTWARE 272 with Terrence Jarrad

01 Overwatch Nerf Guns

$TBA ▪ Hasbro

nerf.hasbro.com

Blizzard and Hasbro is not necessarily a duo we would have pictured together but now that we've seen a couple of images of what they have planned, we're totally okay with it.

POWERED UP: An Overwatch line of Nerf guns – or at least, Reaper's and D.Va's guns so far, and we assume more will be revealed – are due for release in 2019. They will be part of the Rival range from Nerf and will shoot squishy balls rather than the familiar darts. We're just die, die, dying to play with them.

PLAYED OUT: 2019 might be too long to wait. Also, the Rival line has never made it Australia before…

02 Musterbrand Iron Man Cardigan

$250 ▪ Musterbrand

www.musterbrand.com

It's no secret we enjoy Musterbrand apparel. The well-designed threads with subtle nods to geekery that the folks there do so well keep us hanging to see the next piece. And here it is.

POWERED UP: Fronting a new lineup of Marvel gear is this burgundy and gold "Iron Man" cardigan. Appropriately coloured, the cotton cardigan has a rippled pattern that is reminiscent of Tony Stark's armoured suit.

PLAYED OUT: As always, Musterbrand gear would be more affordable if you actually were Tony Stark.

03 Gravity Industries Jet Suit

$610,000 ▪ Gravity Industries

A… erm… stark accompaniment (DAMMIT TERRENCE!) to the Iron Man cardigan is this jet suit, which literally enables a person to fly.

POWERED UP: Two jet engines on each arm, one large one on the back, and a helmet with holographic HUD to display all the vital info to the user (no Jarvis integration yet). Gravity Industries will take a custom order so make sure to request one in gold and burgundy.

PLAYED OUT: You won't exactly be doing international flights, and it looks a bit like flying around with a bunch of Dyson vacuum cleaners strapped to your back and arms.

04 The Barisieur

$650 ▪ Barisieur

www.barisieur.com

Yes there are plenty of coffee machines that can be set on a timer, but this is next level.

POWERED UP: An alarm clock that makes you coffee. Your coffee (or tea) brews right next to your bed, the sound of bubbling water, and aroma of your chosen beverage gently rousing you from slumber, culminating in a caffeine hit within arm's reach.

PLAYED OUT: Cohen's Masterpiece from Bioshock (the piano piece from that infamous "Allegro! Allegro!" scene) is a piece of music this writer can no longer enjoy, due to using it as a morning alarm tone, and slowly growing to hate it, so there's a possibility you'll train yourself to despise the sound, smell, and taste of coffee.

05 Kozmophone

$400 ▪ Kozmophone

www.kozmophone.com

Reaching its crowd funding goal in under a day and set to ship this December, the Kozmophone is a modern take on the classic gramophone or phonograph turntable.

POWERED UP: More than just a music player, the Kozmophone has a portable speaker section with Bluetooth, a headphone stand, a record player, a wireless charger, and inexplicably, a holographic display.

PLAYED OUT: While we can't argue the utility of this piece, we just can't work out who the holograms are for.

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For all rational budgets

BUDGET

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$169 *synology.com*

Good performance and delightfully easy to set up and manage

Synology Router RT2600ac

$328 *synology.com*

Perfect for all but the biggest families, has unusually strong transmission strength

PREMIUM

Asus ROG Rapture GT-AC5300 Gaming Router

$695 *asus.com.au*

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LAPTOPS

Gaming on the go

BUDGET

Dell G3 15

$1,599 *www.dell.com*

8th-gen CPU and a reasonable GTX 1050 is a bargain basic gamer

PREMIUM

Asus ROG Strix G703 GL

$5,999 *asus.com.au*

The best of everything

MINI

For lounge room gaming and streaming

CPU + COOLING

Intel Core i5 7500 w/ stock cooler

$235

intel.com

MOBO

Asrock Z270M-ITX/AC Motherboard

$185

asrock.com.au

GPU

Asus DUAL-RX480-4G

$338

asus.com.au

MEMORY

16GB DDR4 Corsair Vengeance LPX

$249

corsair.com/en-au

STORAGE

Samsung SSD M.2 2280 NVMe 250G 960 EVO + 2TB HDD (any)

$169 + $50 *samsung.com/au*

CASE

Fractal Design Define S Nano

$115

fractal-design.com

PSU

SilverStone SFX Gold 500W SX500-LG

$110

Silverstone.com

SOUND

Your sound system

What you paid for it

DISPLAY

Your TV

What you paid for it

KEYBOARD

Roccat Sova

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www.roccat.org

MOUSE

Roccat Kone EMP

$99

www.roccat.org

TOTAL: **$1,749**

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amd.com

MOBO

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MSI RX 580 Gaming 8GB

$399

msi.com

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$279 *gskill.com*

STORAGE

Sandisk SSD Plus 240GB

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Corsair Carbide SPEC-02 Mid Tower Gaming Case

$80 *corsair.com/en-au*

PSU

SilverStone Strider Essential 500W ST50F-ESB **$55**

silverstone.com

SOUND

Cougar Phontum

$69

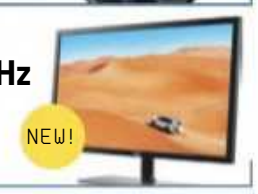
cougargaming.com

DISPLAY

AOC Q3279VWFD8 75Hz Freesync 32in IPS

$299

au.aoc.com



KEYBOARD

Tesoro Tizona G2N

$49

tesorotec.com

MOUSE

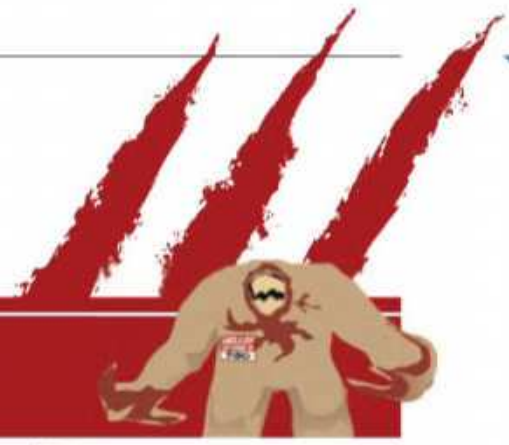
Cooler Master MM530

$59

coolermaster.com

TOTAL: **$1,829**

Many updates this month! Almost every machine as well as the peripheral categories has had an overhaul. AMD has made good inroads with the bangin' new Threadripper 2 entering The Beast, along with a new motherboard and all packed in a very sexy new case. We've updated Budget graphics and a well-matched monitor to go with it, storage, too, while the budget routers all deservedly go to Synology and we've a pair of new gaming laptops.



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MOBO
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asrock.com.au

GPU
Galax GTX 1080 EXOC 8Gb
$689
www.galax.com

MEMORY
G.Skill RIPJAWS 4 32GB KIT 4X8GB
$599
gskill.com

STORAGE
2TB HDD (any) + SAMSUNG 500GB M.2 NVMe SSD 960 EVO
$319 + $50
samsung.com/au

CASE
Fractal Define R6
$209
fractal-design.com

PSU
Be Quiet! Dark Power Pro 11 850W Power Supply
$279
bequiet.com

SOUND
Sennheiser PC 373D
$329
en-au.sennheiser.com

DISPLAY
Asus ROG Strix XG32VQ
$859
www.asus.com/au

KEYBOARD
Cooler Master MK750
$189
www.coolermaster.com

MOUSE
Roccat Kone Aimo
$99
www.roccat.org

TOTAL: **$4,549**

THE BEAST

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CPU + COOLING
AMD Threadripper 2 2990WX + Corsair H105
$2,699 + $145
amd.com

MOBO
Asus ROG Zenith Extreme
$559
asus.com.au

VIDEO
MSI Lightning GeForce GTX1080 Ti
$1,459
msi.com.au

MEMORY
4x8GB G.Skill Trident Z RGB quad-channel 3466MHz DDR4
$745
gskill.com

STORAGE
Samsung 960 Pro 2TB + Seagate Barracuda Pro 10TB
$1,589 + $599
samsung.com/au

CASE
Thermaltake Level 20 GT
$369
thermaltake.com.au

PSU
Corsair RM1000i Special Edition
$279
corsair.com/en-au

SOUND
Astro A50
$399
www.astrogaming.com

DISPLAY
Alienware AW3418DW
$2,099
alienware.com

KEYBOARD
Corsair K95 Platinum RGB
$249
corsair.com/en-au/

MOUSE
Razer Deathadder Elite
$95
razerzone.com/au-en/

TOTAL: **$11,285**

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TRACING YOUR WAY TO NUMBER ONE

When Jordan Mechner decided he wasn't good enough to animate his next Apple IIe game, he came up with an insanely complex solution. But it was also a solution Disney had used 50 years earlier. So maybe it's no wonder Prince of Persia looked way better than it should have.

▼ "Okay, I'll just edge forwar-" *awful death scream*

PRINCE OF PERSIA (THE FIRST ONE)

DEVELOPERS JORDAN MECHNER
PERSONALITIES UH... JORDAN MECHNER
RELEASED 1989
NUTSHELL Simultaneously "failing" college and at the same moment having his Apple IIe game Karateka hit the Billboard number one ["Me and Madonna. Yow."] put Mechner in a weird creative space. As a result, he made a game with animation at least five years ahead of its time. By cheating just like Walt Disney.

Good artists master technique. Great artists invent some kind of tool or machine so they can skip the tedious 10,000 hour process of mastering that technique. We have a special word for this kind of artist: Engineer.

Jordan Mechner isn't an engineer, though. He's a filmmaker. Or is he a game designer? It's hard to say. Really he's one of those classic 80s computer geeks who, back in the day, could do anything... because he had to do everything.

His parents thought he was at Yale to do music and psychology. Yale thought that too. But after the final music exam in 1985, when Mechner's best mates asked him what he'd be doing next year, he replied: "Writing computer games."

How do we know this? Because he kept meticulous journals, and eventually published his 1986-1993 volumes as "The Making of Prince of Persia". Nothing ambiguous about that.

Mechner built those games on an Apple IIe. Sure, it couldn't do non-capital letters like his fancy Mac, but it did condescend to let him program it in the 6502 microprocessor's assembly language. This in turn had allowed him to create a sort of beat-em-up game called Karateka. It was a martial arts action title and it sold... quite well.

"Dad called. Billboard's top-ranked program for this week is, indeed, Karateka. That's Step Two in my convincing myself of this. Step Three will be when I see it for myself."

Step One, we assume, was finishing college.

Now today, all sorts of indie developers can get "number one" in various different ways. Most downloaded free app. Top game on Steam. Top Game On Steam Under $10 And Purchased After 1500h Eastern Standard Time Since Tuesday. Top Game That Didn't Immediately Get Refunded. And so forth.

Mechner's number one was a *Billboard* number one. There were so few PC games, it wasn't even a gaming rank. As he says, it was the number one *software*. But it also beat Flight Simulator II and The Hitch Hiker's Guide to the Galaxy. In 1985, the Dad Domination of the PC gaming space was finally coming to an end.

Even so, his first royalty payment was $2,117. Karateka sold 2000 "units" in April 1985. That was enough for number one.

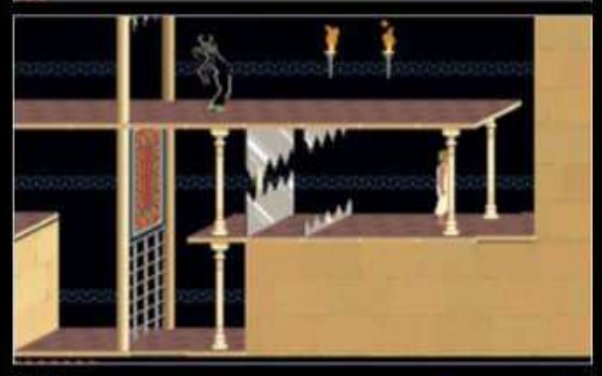
PRINCE OF WHERE NOW?

Wait, wasn't this Hagionaut trip going to be about Prince of Persia? Sure. But you've played it. Every PC gamer played it, even if only for five minutes on DOSBox so you could tell some irritating older relative that it doesn't look that great to you, you [Snip – *Ed* (wait, you don't get to say things and it with –Ed, only I can do that –*Ed*)]. But it doesn't look great. Those rotoscoped animations of the eponymous Prince leaping and shuffling and occasionally - by which I mean, every fifteen seconds - being brutally eviscerated by a corridor-high double-guillotine. They were next level.

PoP was born on the Apple IIe, but by the 1990s it looked amazing on school computer lab 386s because those machines had 256-colour graphics. Our Apple Lab teacher in 1991 maintained there weren't that many colours, but he couldn't deny the slabs of rock or whatever those corridors were made of, sure did look a lot smoother on the PC. Then he'd ban us from the lab for playing games.

STEADY HAND

Before all that though, Mechner had a problem. The problem was how to get all the amazing animation actually into the



computer. In digital form, I'm saying. There were not digital cameras or scanners available to the likes of Jordan Mechner, in 1985.

But Mechner, like all 80s geeks, knew that Disney had created the amazingly smooth and lifelike animations of the female leads in Snow White, Cinderella, Sleeping Beauty, and more, by simply filming real actors. They then loaded the film into their light boxes and traced every swish of fabric and every flick of 1930s hairdo.

Mechner knew the basic process of how to "rotoscope" - as the technique is called - and that's why the Prince has the distinctive skinny frame and gait of his brother. It also explains why, even as the Apple IIe struggled to depict a brick that looked more like about forty Hs stacked on top of each other, the little dude running and jumping over each brick had real momentum. He was the right proportions, and his arms and legs had the kind of weight even many modern games can't quite get right.

But turning the grainy video footage of Mechner's brother into the grainy graphics of Mechner's game was possibly even more involved and difficult than animating the whole thing freehand.

That's because the Apple IIe had no video input. But it did have a thing called a VersaWriter.

This hideous pre-pre-precursor to the graphics tablet our art director uses to make this very magazine looked more like something a jeweller would use to check the authenticity of a diamond. But it plugged into the joystick - sorry, game paddle - port and allowed Mechner to trace every single frame into the computer.

NOT SO FAST

Oh wait, first he had to play the video on his TV and take a photograph, with his 35mm film camera, of each frame (more or less, since VHS doesn't have the same kind of frames as... never mind, it was a pain, is all).

Then he had those photos developed and printed at the local photo shop who must have thought he had a weird - but not very weird by the standards of what they saw every day - fetish.

Back home with a giant stack of photos, Mechner then traced each one into the Apple IIe with the VersaWriter. Each frame took hours. The first eight-frame running sequence took days.

"But the result was worth it," Mechner told Forbes in an interview. "The moment I finally saw the character running across the screen, I got chills. As rough and pixel-y as it was, I recognised my brother's way of running, his physical personality. It was the illusion of life."

He gave that interview in December 2017, which (along with this Hagionaut trip) just goes to show the enduring charm of Prince of Persia. From that game, Mechner went on to create a sequel, then he wandered lost and confused in Hollywood until becoming one of the only videogame original creators to write the (first draft of the) screenplay for the movie adaptation of the videogame he created. Got that?

Though to be fair, *Prince of Persia* the movie was based on Ubisoft's *Prince of Persia: The Sands of Time* the game, which was only loosely based on Broderbund/Mechner's *Prince of Persia Wasn't There a Subtitle About an Hourglass No Okay Then* the game. Also, most people think the movie sucks.

But Mechner doesn't care, because there's a Prince of Persia LEGO theme. And we know what he means. Everyone gets a movie these days. But when LEGO licenses your idea, that's when you know you've made the zeitgeist. PC

Next Issue

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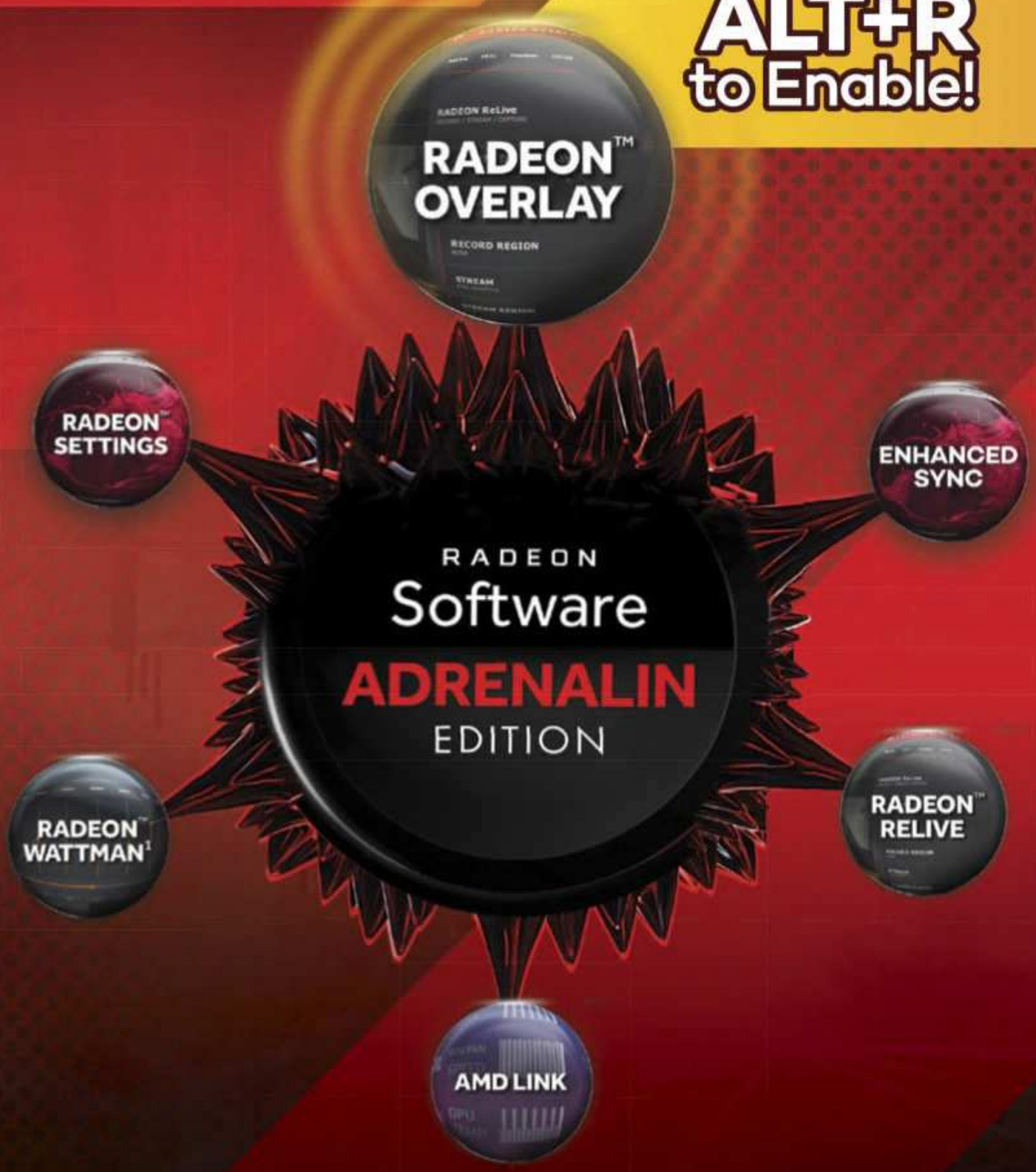

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Software
Adrenalin Edition

[1] http://www.radeon.com/chill
[2] Requires a monitor and AMD Radeon™ graphics, both with FreeSync support. See www.amd.com/freesync for complete details. Confirm capability with your system manufacturer before purchase. GD-127
[3] Frame rate targeting is designed to reduce heat, noise and power consumption by letting users set a target frame rate for their games and applications. Not currently compatible with AMD CrossFire™ multi-GPU configurations. Confirm supported technologies with your component or system manufacturer for specific capabilities before purchase. GRT-1

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